



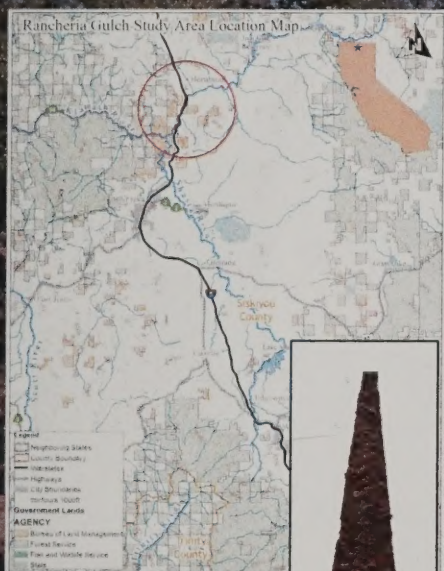
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U.S. Department of the Interior  
Bureau of Land Management

# Informative Archaeological Discoveries in a Forgotten Place

## Rancheria Gulch, Siskiyou County, California



Report by

**Eric W. Ritter**  
**Alden R. Neel**

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# INFORMATIVE ARCHAEOLOGICAL DISCOVERIES IN A FORGOTTEN PLACE: RANCHERIA GULCH, SISKIYOU COUNTY, CALIFORNIA

By

Eric W. Ritter and Alden R. Neel

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References Cited .....	93
Appendix 1 .....	100
Select Historic Deeds and Mining and Water Rights' Records for the Locality.....	100
Appendix 2 .....	102
Artifact Field Identification List: Rancheria Gulch Hamlet .....	102
Unit 1 Artifacts (All Units Are 25 m x 25 m) .....	102
Unit 3 Artifacts (Partial Surface Collection) .....	103
Unit 4 Artifacts .....	104
Unit 9 Artifacts (Small Test Unit's Screened Contents Included).....	106
Unit 10 Artifacts .....	111
Unit 12 Artifacts .....	112
Appendix 3 .....	116
Obsidian XRF Results .....	116
Appendix 4: .....	124
Pollen, Phytolith, and Starch Analysis.....	124
Appendix 5: .....	139
Radiocarbon Dating.....	139

## List of Figures

Figure 1: Map of Study Location .....	3
Figure 2: Rancheria Gulch Hamlet Location Looking Southerly (note road and structure pad area) (2010 photo).....	4
Figure 3: Historic Map of Rancheria Gulch (after Dunn 1894).....	10
Figure 4: Archaeologist Max Kalina Points to Mining Shaft below Conglomerate Layer.....	11
Figure 5: Reed's Mining Complex or Rancheria Gulch Site Looking East toward Black Mountain (Photo 2019) .....	15
Figure 6 : Plan View Map of Site and Unit Grid with Collection Units Shaded .....	16
Figure 7: Metal Detector Workers Beginning South Sweep in Unit 4.....	17
Figure 8: Test Unit 1 in Rich Artifact and Ash Location (Note Ash Lens in Profile) .....	24
Figure 9: Cast Iron Skeleton Key.....	25
Figure 10: Small Cylindrical Canister and Sardine Canister.....	26
Figure 11: Lid to a Ferrous 2 ½ Gallon Canister with D-Handle .....	27
Figure 12: Patent Diagram for an Oil-Can Faucet as Found at the Site.....	28
Figure 13: Lead Sheet Scrap and Black Powder Can with Lead Top .....	29

Figure 14: Medicine Bottle Shards .....	30
Figure 15: White Earthenware Vessel Sherds, Polychrome Earthenware Sherds, and Chinese Double Happiness Porcelaneous Rice Bowl Sherds.....	31
Figure 16: Cast Iron Stove Leg, and 4 Qt. Kettle Part.....	32
Figure 17: Interior Cast Iron Coffee Grinder Piece.....	32
Figure 18: Cast Iron Stove Part?.....	33
Figure 19: Cutlery Remnants of Wood, Iron, and Pewter .....	34
Figure 20: Metal Dinner Plate .....	35
Figure 21: Cuprous Locket and Metal Button Remnants (Visible Threads Are Modern).....	36
Figure 22: Ferrous Suspender and Belt Buckles (Visible Threads Are Modern) .....	37
Figure 23: Rubberized or Gum Boot Sole and Boot Inset .....	38
Figure 24: Brass Instrument Cap, Ferrous Sewing Needles; Cuprous Boot or Shoe Tip with Ferrous Nails, and Cuprous Comb and Harmonica Reed .....	39
Figure 25: Cuprous Shoe or Boot Toe Protector Patent (Also See Figure 24).....	40
Figure 26: Possible Ferrous Umbrella or Parasol Stay .....	41
Figure 27: Cuprous Gold-Gilded and Ferrous Coin Purse Snap Top.....	41
Figure 28: Ferrous Hand-Forged Horseshoe with Toe and Heel Calks.....	42
Figure 29: Broken Shovel and Riddle Plate Parts on Likely Structure Footing Stone.....	43
Figure 30: Fabricated Ferrous Crevassing Tool? .....	43
Figure 31: Well-Used Ferrous Wedge .....	44
Figure 32: Modified Shovel Possibly for Scooping Soil/Sediment Material from Sluice Box.....	44
Figure 33: Ferrous Possible Door Strike Plate and Lock Mechanism Part .....	45
Figure 34: Re-Used Canister and Sheet Metal Piece.....	50
Figure 35: Ferrous Needle.....	51
Figure 36: Unidentified Lead (?) Box, Possibly Painted White or Oxidized.....	52
Figure 37: Lead Seal Part and Tobacco Tag.....	53
Figure 38: Cuprous Decorated Band with Nail Hole .....	53
Figure 39: Cuprous Folded Band .....	54
Figure 40: Unknown Ferrous and Cuprous Item, Possibly Electrical .....	54
Figure 41: Common Cut Rockshelter Outcrop .....	60
Figure 42: View of Shelter, Wall in Front, and Unit 3 below.....	61
Figure 43: Chimney Foundation Remains by Common Cut Rockshelter .....	62
Figure 44: Plan View Map of Shelter and Unit Layout .....	63
Figure 45: Unit 1 Layout Prior to Excavation.....	64
Figure 46: Unit 1, as Completed.....	65
Figure 47: Unit 3, as Completed.....	66
Figure 48: Unit 2 at Bedrock .....	67
Figure 49: Upper Left Is a Bipolar Core; Remaining Pictures Are Utilized Flakes, All Obsidian .....	73
Figure 50: Possible Broken Glass Utilized Edges on a Blue Bottle Finish and Crystal Tumbler Pieces.....	74
Figure 51: Ferrous Sheet Metal Arrowhead.....	75
Figure 52: Closeup View of Cloth Remnant on Ferrous Sheet Metal Arrowhead.....	76
Figure 53: Close-up Image of Residue Left on Ferrous Arrowhead .....	77
Figure 54: Obsidian Projectile Points Found near Rockshelter .....	79

Figure 55: Glass Trade Beads .....	81
Figure 56: Cuprous Pistol Percussion Cap, Hook, and Eye Clasp, and Pronged (Tobacco?) Tag.....	83
Figure 57: Ferrous Suspender Buckle, Porcelain Prosser Button, and Cuprous Button .....	84
Figure 58: Brown Ceramic Sherds on Left, Non-Ferrous Metal Pin or Nail, Ferrous Tack, and Broken Common Cut Nail .....	85
Figure 59: Lead Gunpowder Can Lid (Lower Left), Lead Tag, and Lead Sheeting .....	86
Figure 60: Animal Long Bone Fragment Used in C-14 Dating (mm Scale) .....	90

## List of Tables

Table 1 : Datable Artifacts with References by Unit .....	18
Table 2. Artifact Assignment by Function .....	21
Table 3: Approximations of Collection Unit Artifacts by Functional Context (Nails Excluded).....	22
Table 4 : Unit 1 Nails .....	47
Table 5: Unit 4 Nails .....	47
Table 6: Unit 9 Nails .....	48
Table 7: Unit 10 Nails .....	48
Table 8: Unit 12 Common Cut Nails .....	49
Table 9. Common Cut Rockshelter (CA-030-2147) Catalog with Notes.....	68
Table 10. Common Cut Nails and Tack on Apron below Shelter (Metal Detector Finds) .....	87
Table 11. Common Cut Nails from Cabin Foundation Adjoining Common Cut Rockshelter .....	87

## Abstract

Limited, but informative archaeological and archival investigations were undertaken during the summer of 2018 (with post field archival studies) in northern California's Siskiyou County by Bureau of Land Management investigators assisted by Passport in Time volunteers. The focus location was at adjoining late prehistoric, contact-era, and historic site complexes within the foothills of the Klamath Mountains near Hornbrook. The results, chronicled in this report, are from work focused on an early Gold Rush-post Gold Rush mining camp called Rancheria Gulch (actual hamlet name unknown) and at a nearby late prehistoric-early historic era Shasta Indian rockshelter residence that we call Common Cut. This work was prompted by prior illegal excavations, off-road vehicle damage, and future threats to the cultural resources.

The historic mining hamlet is located near an early wagon road within an open field situated between ridges and adjoining gold-bearing drainages that empty into the nearby Klamath River. Systematically placed metal-detecting units were sampled within this field where faint traces of scattered structures are evident. This hamlet was related to the more expansive Cottonwood Mining District and appears to date primarily from the early 1850s into the 1870s. Even after this period, there were newly discovered rich, gold-bearing ancient gravel deposits that were exploited well into the 20<sup>th</sup> century.

Archaeological evidence and historic documentation point to frugal male miners, and perhaps several female residents or visitors, who relied on commodities from a well-developed world trade system that reached this remote location. Goods were obtained by way of steamboat, wagon, and pack train organizations from San Francisco traveling north, and from Oregon and perhaps far northern California port sources. Newly-arrived American, European, Chinese, and possibly other ethnic individuals came and went here. These were not well-to-do folks as evident in commodity re-use and salvage of the items broken, disposed of, or lost here. There is a strong suggestion of individualism, of itinerant commoners seeking riches, or at least a modest income. There is little or no evidence of a Victorian-era sense of order, tidiness, and community structure. Here was nearly level land not far from water, gold claims or operations, a transportation route, and a town (Henley) of merchants and services.

The rockshelter, within a prominent sandstone outcrop, was utilized by late prehistoric and Colonial-contact period Shasta tribal members for hunting animals such as deer and gathering grass seeds, geophytes, and other plants in their subsistence pursuits, likely at least during the spring. These individuals and/or a small family group may have had an interplay with early trappers and traders and later the miners for a short period of time until their extermination, displacement, or absorption into the mining community or elsewhere.

This study location proved rich in evidence of day-to-day past human behavior. There is a promise that future studies would be exceedingly informative regarding this remote location within a heritage-related, little-studied region of the West. And there is a need for continued resource management attention.

## Introduction

There are many factors in the early 21<sup>st</sup> century that pilot archaeological investigations beyond mere site documentation. From a federal land management perspective these include legal guidance directed at agencies such as the Department of Interior's Bureau of Land Management for site protection, research, and public outreach. There are also the nuances of awareness of regional research issues, mitigation of on-going site damage, unique discoveries awaiting further study, opportunity, and curiosity. Personnel, time, funding, access, and other logistical challenges come to bear. Siskiyou County in California's northernmost reaches remains a relatively little studied area in terms of both prehistoric (or pre-Colonial) and historic (or post European contact) research. It proved challenging for the authors to pass up an opportunity to complete archaeological explorations at two closely aligned archaeological sites near the town of Hornbrook within the Klamath River Canyon. The following narrative details the 2018-2019 work and discoveries related to two archaeological sites designated the Rancheria Gulch Hamlet or Reed's Mining Complex and Common Cut Rockshelter (Figure 1).

## Archival Research

Aside from a review of the regional and local ethnographies, histories, and relevant archaeological reports, an effort was made to delve into the more obscure documents that might reveal information on the past peoples and their activities at the adjoining sites. This necessitated research into museum, County Recorder's Office, and local educational facilities archives. Six days were spent at the Siskiyou County Recorder's Office, at the Siskiyou County Museum, and at the Siskiyou College library. Bureau of Land Management maps and documents were also researched and a Shasta tribal elder consulted. Results were moderately successful and further research and outreach could be done.

## Oral History

During 2018 field work on the 13<sup>th</sup> of June 2018 a local old-timer who only gave his name as "Hoss", visited the project. He was about 80 years old and indicated he had lived in the area since 1949. He told the senior author that he called the location Dutch Gulch, that there used to be two cabins here razed by BLM in the 1980s (more likely 1960s). He mentioned a small dam and reservoir in the drainage (that still exists) "full of junk." He indicated that 400 Chinese lived on the south side of the area and 600 whites on the north side. He specified that every time the Chinese-Americans broke camp they would break a plate, and that picks, candle holders, Chinese jewelry, and other items were found here in the past. He also indicated that the water they used pushed the gold down to the river in the flat's south ravine. While some of this information may be exaggerated, it still gives data worth investigating.

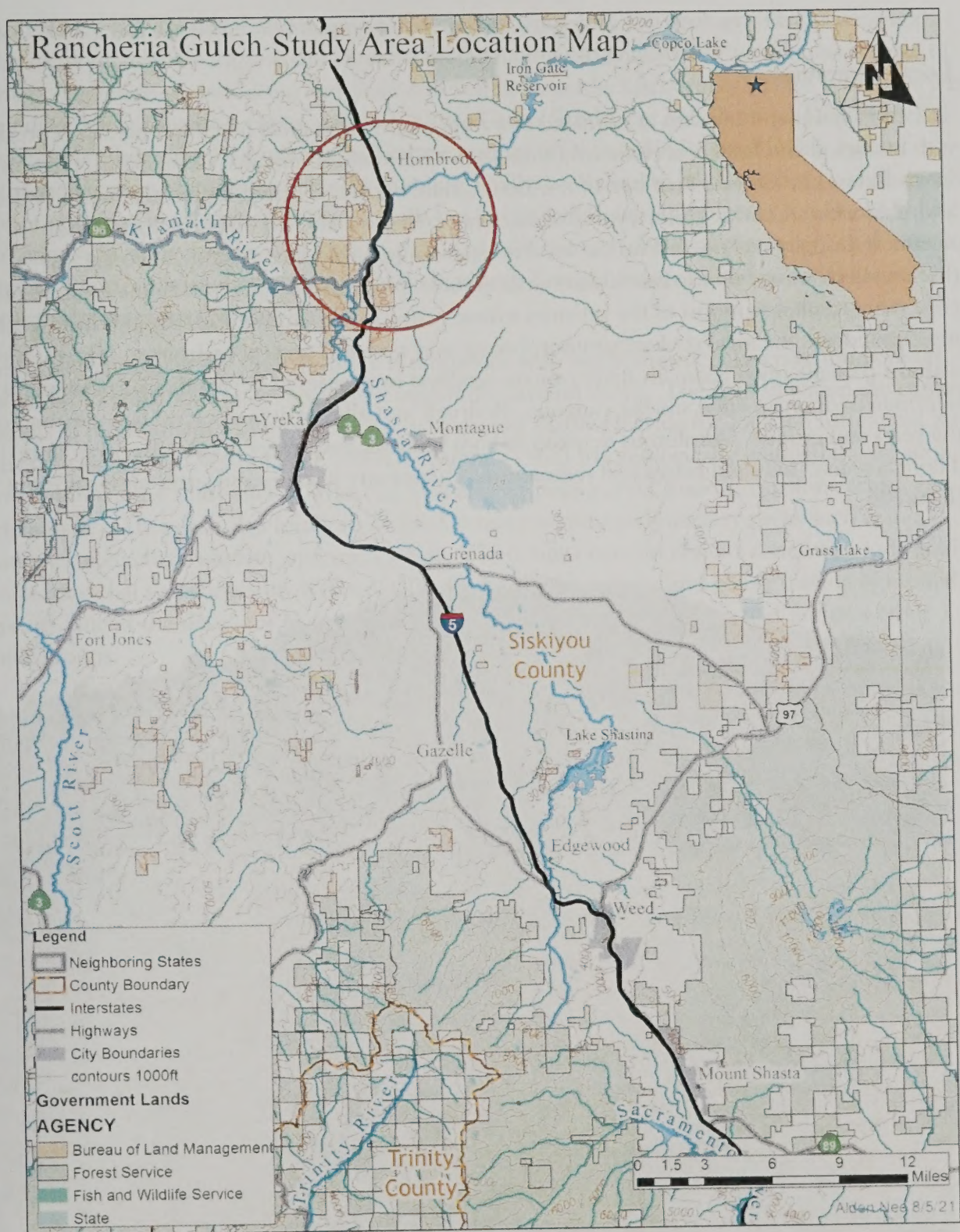


FIGURE 1: MAP OF STUDY LOCATION

## Local Environment

The two adjoining study sites are situated in a zone of environmental heterogeneity, an ecoregion with biological and botanical elements found in the Klamath Mountains, Great Basin, Oregon Coast Range, the Coastal Province of northern California, the Cascade Range, the Sierra Nevada, and California's Central Valley ([worldwildlife.org/ecoregion/na0516](http://worldwildlife.org/ecoregion/na0516)). This biological and botanical diversity was not lost on the local indigenous peoples whose culture at contact is discussed below, nor on the first visitors such as the exploring fur trappers. On the other hand, a core value resulting in most of the activities whose vestiges were archaeologically and historically investigated was the local geology/geomorphology and past and present hydrology. The locality is within a partially open Klamath River canyon supplied by a series of perpendicular permanent or intermittent drainages and smaller canyons. Bedrock and alluvial deposits have been formed over the years and eroded. Auriferous deposits in both bedrock and placer conditions occur here. There are small hills and ridges and remnants of Quaternary terraces and small basins present (Figure 2).



FIGURE 2: RANCHERIA GULCH HAMLET LOCATION LOOKING SOUTHERLY (NOTE ROAD AND STRUCTURE PAD AREA) (2010 PHOTO)

Nilson (1993) has discussed and mapped in detail the study location geology. Five marine and non-marine members compose the Hornbrook formation, originally a likely continuous sheet of marine conglomerate, sandstone and shale covered in places by Quaternary terrace remnants. The immediate area of the sites contains the Osburger Gulch Sandstone Member, the Ditch Creek Siltstone Member, and the Quaternary Terrace remnants (Nilson 1993:12-13). One major sandstone/conglomerate outcrop has been differentially weathered to form small rock shelters and cavities. Erosion from higher up the foothills has led to sediment deposition in Rancheria Gulch (also named in some references Dutch Gulch) that runs through and past the sites. Local soils are Lithic Haploexerolls, shallow, excessively drained soils formed from residual material derived from nearby outcrops (Newlun 1983:12).

Present-day climate in the study location is temperate with warm summers (average temperature around 68°F) and cool winters (average temperature around 36°F). The sites sit within the eastern foothills of the Klamath Mountains that serve as a rain shadow leaving the location with about 20 inches of rain a year (Newlun et al. 1983:2). Strand (1963) has geologically mapped the location above and near the study sites as Miocene Volcanic including greenstone, greenstone schist, and metadiabase. There are also locations of pre-Cretaceous meta-sedimentary rocks such as quartzites, metachert, phyllite, and mica schist. These units contain contact zones with lode gold in quartz veins that sometimes proved profitable for hard rock mining and placer mining of eroded deposits, one of the draws for Europeans, Americans, Chinese-Americans, and perhaps other ethnic groups.

### **First Inhabitants, The Shasta**

The inhabitants of the study location at the time of European contact were the Hokan-speaking Shasta Indians. The Shasta people were composed of small village groups of hunters-gatherers whose main foods included the salmon, acorns, deer, bear, waterfowl, various nuts, roots, bulbs and berries, and other foods. The nearest documented contact-era Shasta village to the study location may be the village of *Hah s-nit* located on a flat two miles south of Henley (Merriam 1976). Another village was at the mouth of Cottonwood Creek as it entered the Klamath River. This village was known as *okway iq* following Dixon (1907:Plate LIX) or *uk kwa yi k* after Silver (1978:211, Figure 1). A housepit village that's Shasta name is unknown but may possibly be *A-chit-ter-ruh-kak* lies very close to the study location situated across the river (Merriam 1976). There is an apparent late prehistoric site here.

Each Shasta village had a headman or chief with bilateral or patrilineal-oriented descent groups. Shamanism and spiritualism were strong components of Shastan society and certain property rights were known. Houses were rectangular, multi-family dwellings and the populations' tool kits included an assemblage of worked stone, wood, soapstone, bone, antler, and shell. Various shell beads of abalone and dentalia, and basketry and feather items were common. The Shasta practiced a pattern of seasonal transhumance, residing in the valleys in the winter and moving into higher elevations in the other seasons pursuing foods available there. It is possible that at one time a small enclave of Shasta people was present in this drainage resulting in the Rancheria Gulch name.

## Ethnohistory

Gleason (2001:108-121) has amply discussed the ethnohistory of the Shasta. A few pertinent particulars regarding her deliberations are presented here. It is likely there was contact between the Shasta and Europeans or their goods in the early 1800s. Forbes (1993:56) discusses a meeting in Oregon's Willamette Valley in 1814 of trappers encountering Shasta who were on a trading expedition. Dixon (1907:436) remarks that there was quite a bit of trade with "the various Athabascan people of the Rogue River and thereabouts."

Following Wells' early narrative (1881:20), the first non-Indians to visit the study locality were trappers of the Hudson Bay Company. Dixon (1907:386) suggests they came down the Klamath River from the east into the Shasta territory. Alexander Roderick McLeod entered northern California in 1829 from Fort Vancouver. Another trapper, Peter Skene Ogden, was in or near the study area a year earlier in 1828 according to Sweeney (1930:10), probably 1827 (LaLande 1987). Fur trapping brigades soon followed McLeod including those of Michel Laframboise in 1832 and numerous others until 1843 (Dillon 1975:361).

By the 1840s, a few immigrants seeking greener pastures beyond the study location passed nearby. With the ensuing Gold Rush, "The miners had an overall negative impact upon the Shasta populace from the moment of their entrance into the region" (Gleason 2001:113).

According to Dixon (1907:389), the California Gold Rush and the Rogue River wars of 1853-1856 along with "...unprovoked murder, massacre, disease and famine consequent to the destruction of their food supply" led to a population decline from perhaps 2000 or so to a few score by the early 1900s. Some features and artifacts at the study location represent this transitional period in culture and place as discussed later in this report.

Along with the miners there came ranchers, farmers, lumbermen, and surveyors, among others. It is likely that for the first years of the Gold Rush Shasta were employed by these "colonists" if not killed, enslaved, or otherwise harmed and displaced. The military early on established an outpost at Fort Jones to quell the unrest including the signing of a treaty that was never ratified by Congress. One form of cultural resistance was the development of various cults or revitalization religions such as the Ghost Dance introduced in 1871. As noted by Gleason (2001:120), many Shasta survived the early historical period by seeking refuge on ranches or, in the case of women, marrying or living with miners or ranchers. Despite the cultural holocaust, Shasta identity and knowledge has been passed down through the generations till today. Shasta elder Mary Hall Carpelan visited the location during the project but possessed no knowledge of Shasta locations here.

## Prehistory/Protohistory

The prehistory of the region is best known by archaeological work a day's walk or less from the study locality in Shasta Valley and within the Klamath River Canyon. King et al. (2016:30-40) divide the Upper Klamath region into seven cultural periods with the Pre-Clovis Period (14,500-13,500 cal years Before Present) controversial with no evidence in the general region. The Clovis Period (13,400-12,800 years Before Present) is only known from a few ephemeral sites in Siskiyou

County many miles from the study location. Small mobile groups of hunters and foragers with their characteristic large, fluted spear points define this period. A Paleoarchaic Period is listed in the King et al. report as 12,800 to 7400 calibrated years Before Present. Mack (1983) reports that a surface find of a projectile point base fluted on one side and shaped like a Windust base on the other side was found at southern Oregon Klamath Canyon site 35KL18, and that several Great Basin Stemmed point bases were recovered from Upper Klamath River upland sites.

The periods with more evidence in the middle Klamath River area (Mack 1991:33) include the Secret Spring (8300-7800 cal years Before Present), the Basin (7800-5200 cal years Before Present), the River (5200-2250 cal years Before Present), the Canyon I (2250-1000 cal years Before Present), and the Canyon II (listed as post-1000 cal years Before Present). A Contact Period or sub-period (A.D. 1820s-1850s) can be added to this list.

During the Paleoarchaic period there was a focus on marshland habitats such as Siskiyou County's Meiss Lake area. Large stemmed projectile points and milling slabs are present, and there is a widening of diet breadth from earlier times. Secret Springs and Basin periods are thought to be times of population movements where there were influencing events such as the Mt. Mazama volcanic eruption and more aridity. After populations became more stabilized, there was likely less group mobility and more residential constancy. It is probable that populations increased. Tool kits included Northern Side-notched projectile points and slab metates.

The River Period represents cooler, wetter times with a sophistication in material culture. There are inferred settlement hierarchies as populations continued to increase. The period also incorporated logistical large game hunting, and there were more sites and milling activities, and more sophisticated tool kits including milling tools, McKee, Elko and Siskiyou Side-notched projectile points, and elaborate bone tools.

Canyon I times witness the introduction of the bow and arrow replacing the atlatl, more sedentism, establishment of exchange networks, and riverine orientations with fish and root crops as important foods. Canyon II is a time when bow and arrow use involves more upland locations where native root crops are important. There are more villages in the Klamath River Canyon during the Canyon II Period where salmon and acorns are important foods along with geophytes from upland lithosol meadows. Pottery use is developed continuing into the latest times of interaction with Europeans and Euro-Americans in the Contact Period. This is a time of dramatic culture change to the Shasta peoples with the introduction of conflicts and diseases. Trade goods are adopted. There is also the embracing of religious cults to cope with land and resource losses, armed conflicts, dramatic population decreases, and re-location to reservations or temporary escape to safer locations like the uplands where mining and homesteading were not occurring. These latest periods are represented by the assemblage at the Common Cut Rockshelter discussed below.

### **Local Historic Mining**

Today's apparent obscure historic places can reveal information relevant to understanding past human behavior through careful historical research coupled with archaeological investigations.

After initial field discoveries, the authors believed these places discussed herein had that potential, and there was launched a public archaeology project subsequently supported by document research and analysis of data recovered.

Wells (1881:210) in 1881 reviews the “old mining town of Cottonwood that has been a rich mining district”, one that includes the study location. The 1875 Government Land Office plat lists the location as the Cottonwood Village. Wells notes (1881:210) that “...many an ounce of dust has been taken from Stone gulch, Dan Downes’ gulch, Rocky gulch, Brass Wire channel, John Hatch hill, Milk Ranch claim, Turnip Patch claim, Canuck (Kanaka?) gulch, Rancheria creek, Cottonwood creek, Dutch gulch, Printer’s gulch, Buffalo flat, etc.” Some of these names are known places (based on USGS quadrangles) surrounding and possibly including the study location; some are buried in obscure historic records or lost to history. Wells (1881:210) further reports the first prospecting in the location occurred in the spring of 1851 followed in the summer and winter by many miners working Cottonwood Creek and nearby gulches. Trading at first was done with Yreka but as mining developed a store was opened in 1851 in Cottonwood (later re-named Henley) followed by several more stores the following year.

Wells (1881:210) states that for five years after 1851-1852 Cottonwood flourished followed by a decline in the mining. However, as indicated below, there was still reliable gold mining production in the 1860s-1870s and after Well’s 1881 observations. There was late 19<sup>th</sup> to early 20<sup>th</sup> century resurgent mining in the locality based on older discovered but little exploited and understood gold-bearing Tertiary beds as well as a continuation of hard rock mining as discussed below.

It is pertinent in understanding the archaeological evidence of mining-related activities at the Rancheria Gulch locality (verified in information below as the most cited name for the area), or Reed’s Mining Complex (not the original name), and less so at the nearby Common Cut Rockshelter to relate what *The Mining and Scientific Press* (1868:20) stated about 1867 gold mining operations in northern California. “Gold and River Bar diggings, at first the principal branches of mining, have now become so far depleted as to count but little in the general estimates made of the business in California. Nevertheless, they still give employment to considerable numbers especially in the more northerly counties (including Siskiyou)....reworking the river bars year after year, and resorting to the gulches and ravines during the winter when the rain fall supplies water for washing with success...” The reasons behind this post-Gold Rush resurgence locally are attributed to the locality’s remoteness, past tribal hostilities, ruggedness of country, travel distances, living costs, etc.

Dilsaver (1985:2-4) examines the decline in gold mining in the central Sierra beginning in 1854. He affirms that only two groups, European and American part timers and Chinese-American miners continued placer mining in this area by the 1860s. “Neither the part time miners nor the Chinese were an important component in survival of the mining towns extant in 1880.” There appears to be a difference between what was happening in the Sierra Nevada and what was happening in this location of the “Northern Mines”. Certainly, there were many factors such as geography, resources, transportation systems, mining methods, living costs, etc. affecting every mining hub and its demography and long-term settlement development and duration. Later,

hardrock mining was another factor in the resurgence of mining as well as improved technology and understanding the local geology for the placer deposits. In the Rancheria Gulch vicinity, even new discoveries of large and ancient gravel beds were important to the local and broader economy. One research question here is the fit of this locality with the Dilsaver contention. The authors are examining the subject site on a micro and macro point of view. Do we know specifically of the historic occupation and use of Rancheria Gulch and how does it compare with the lifeways and operations of other mining camps and operations in Siskiyou County during the latter half of the 19<sup>th</sup> century?

One pertinent article regarding auriferous conglomerates in California was most revealing in terms of the study location. Dunn (1894:466-467) relates,

In 1852 the shallow placers of Cottonwood Valley were discovered. Limited in extent to a district not over 3 miles long by 1 1/2 wide, they have yielded....since the date of discovery an immense amount of gold. Nearly all the mining was done in the "fifties" by individual miners or small companies, using only the simplest appliances—pan, rocker, and sluice....The town of Cottonwood, now Henley, built and supported entirely by these mines, at one time in the early fifties" had a voting population of 700, and a Chinese population of 500.

Almost exclusively all the mining has been in the fragmental remains of the old channels lying in the valley between the channel known as the crystalline wash and the present channel, and in the channels of several of the tributaries. No gold has been found in the crystalline wash, and the present bed of the creek was not especially productive. Rancheria Gulch contained a small area of exceedingly rich placers and became the **site of a small mining hamlet** (emphasis by the authors) for several years.

The situation of Rancheria Gulch with reference to the "Auriferous Conglomerate," the absence of quartz veins within the drainage area sufficiently numerous and rich to have been the source of the gold found in the placers with gold found since in the adjacent conglomerate, are conclusive in establishing the "Auriferous Conglomerate" as the source of the gold.

Modern day topographic maps do not have Rancheria Gulch identified. However, a map in Dunn (1894) (Figure 3) identifies this gulch as the location of the sites in questions. Dunn (1894: 468) identifies the local creeks related to the auriferous conglomerate from north to south as Bushy Gulch, Ditch Creek, Rancheria Creek, Rocky Gulch, Kanaka Gulch, and Rancheria Gulch. The 1955 United States Geological Survey 15' Hornbrook Quadrangle has the following named gulches from the north near present day Hornbrook /Henley to just below the study area a few

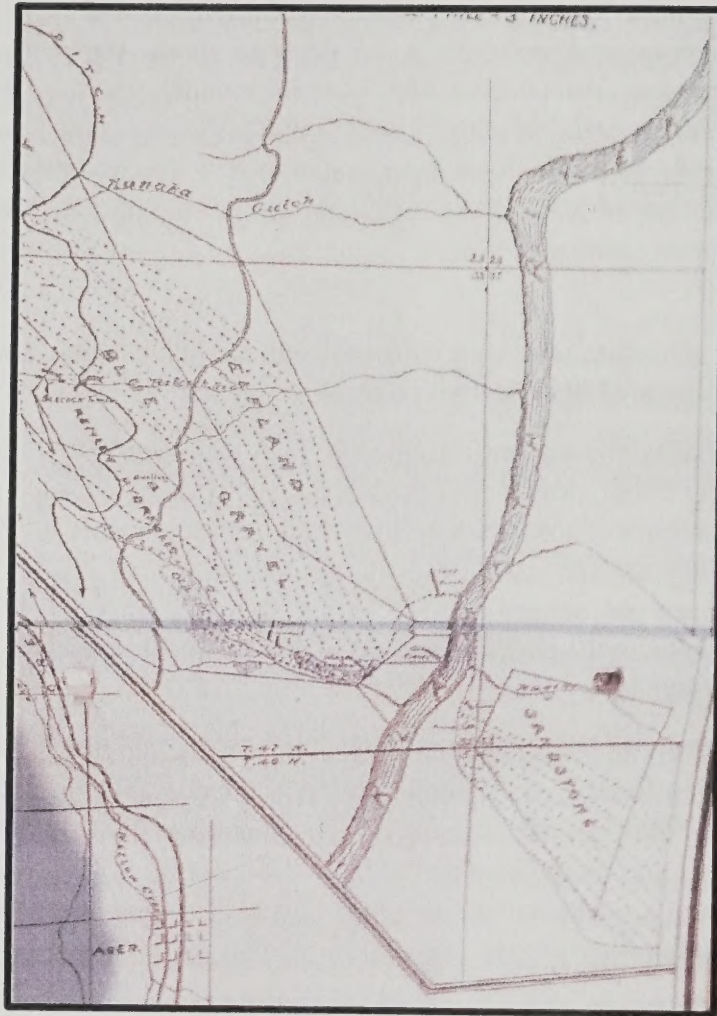


FIGURE 3: HISTORIC MAP OF RANCHERIA GULCH (AFTER DUNN 1894)

hundred yards as Ditch Creek, Rancheria Gulch, Rocky Gulch, and Printers Gulch. Clearly there has been local misnaming, multiple names for one drainage, confusion, and naming shortcomings since the historic period. Most relevant is the USGS labeling of Rancheria Gulch (earlier Rancheria Creek) and the non-labeling of Rancheria Gulch of historic times where the archaeological work occurred. To add further to the name confusion, is the information discussed above from old-timer “Hoss” who stated that the project location was Dutch Gulch. Gudde (1975), in his listing of California gold camps, mentions “Rancheria: Creek, Gulch”, noting tunnel work in the location in 1867 and placers again in the 1880s. Which of the locales’ Rancheria Creek/Gulch this applies to is uncertain.

Dunn (1894: 468-469) shares that the auriferous nature of the conglomerate channel was not fully realized until the investigations by C.B. Jillson in 1887. Jillson operated the defined deposit by hydraulic means with water coming from Ditch Creek via ditch (see Figure 3) and by black powder explosives. Cemented deposits were also worked by an arrastra. Some of his mining records are

included in APPENDIX 1. According to the *Yreka Union* of November 23, 1867, a company of miners (Messrs. Donahy, Micklewail, Shaft, and others) at "Rancherie Creek near Cottonwood", were running a tunnel into the bank or hillside above the very rich bed of the gulch with the expectation of finding the source channel rich in gold. This was the evident discovery of the channel. Ireland (1888:586) notes that two tunnels (adits) were being worked at the time of his writing, less than 200 feet in length with four men running drifts. These men and/or those listed above, may have been some of the hamlet's occupants. Relevantly, immediately below Common Cut Rock shelter of this project is an adit or inclined shaft going into the hardened gravels (Figure 4).



FIGURE 4: ARCHAEOLOGIST MAX KALINA POINTS TO MINING SHAFT BELOW CONGLOMERATE LAYER

A discussion in the Siskiyou County mining summary in the 1893 *Mining and Scientific Press* (page 77) notes that "Jillson & Co. of Henley, are still piping in blue gravel at Klamath River in Cottonwood district and will continue to do so until the water gives out, as it will take but little time and small amount of water in cleaning up." There is also discussion of blasting the lower strata and crushing with an arrastre. Dunn (1893:148), in discussing the Blue Gravel Mining Company, indicates that "Gravel from a drift on the bedrock in the lower portion of the pit washed up at the rate of \$6 a cubic yard, and the average of all the ground hydraulicked has been 24 cents a cubic yard. In the year 1892, sixty days' run with 700 inches of water used from reservoirs that only have two hours run at a time, returned \$12,000.00 (\$340, 371.00 in 2020 dollars!), being at the rate of \$200 a day and 29 cents an inch for the water. An anonymous *The Mining and Scientific Press* article from June 10, 1893, considers mining in the Cottonwood District noting "Gilson & Co. ....are working the Blue Gravel in a larger scale. This is probably one of the most extensive hydraulic claims in the district."

Wilson (1897:193-227) describes an early geological survey of the study locality undertaken by William Porter Bennett that affirms the drainage naming and its gold riches:

Having had many years of experience in hydraulic and drift mining...I was called to examine a hydraulic property ...in Siskiyou County. The evidence of early rich placers, at Hornbrook....also the auriferous deposits of Henley and vicinity, confirmed my opinion, that they had been made by erosion of an ancient river or glacial system. From the topography of the country I traced its crossing of Cottonwood creek, Rancheria creek, Rocky gulch, Kanaka gulch, Rancheria gulch, Klamath river, Yreka, and at a point between the latter place and Big Butte Creek, Butte county, where it merges into the Sacramento Valley. At Henley, I learned that the Klamath river, at the intersection of the crossing of this ancient system, was very rich, having paid as much as two thousand dollars to a single pan. Rancheria gulch, Kanaka gulch, Rocky gulch, Rancheria creek and Cottonwood creek were all rich.

Using the place names provided by the documents listed above a search of the County Recorder's records for mining-related filings and mining documents was accomplished hampered to some extent by local policies preventing inspection of some of the early papers and poor copies of some records.

While the local workings' documents during the Gold Rush (ca. 1849-1854) are scarce in the facilities researched, by the 1860s the records of those using the County courthouse are more prevalent for the general locality. Many records for the "Cottonwood District" were not examined and could relate to the Rancheria Gulch location not specified in detail on the listing.

The earliest recorded mining claim in the vicinity of Rancheria Gulch is by the Rocky Gulch Company in 1859 (see APPENDIX 1). In 1864, A.B. Warren et al. filed a quartz claim for Rancheria Gulch. There are 1869 and 1884 quartz claims for Rocky Gulch and Dutch Gulch, and a placer claim for Dutch Gulch in 1886. The Jillsons began to record claims for Rocky and

Rancheria gulches in 1887-1888. As sporadic as these records are, there was clear mining activity by companies of men here from the 1850s even into the 21<sup>st</sup> century as evident in modern mining claims. Some of these men in the earlier times were likely living in the study site hamlet.

The Index to Deeds at the courthouse (APPENDIX 1) lists a Cottonwood District deed from 1858 and a Jillson deed for Rancheria Gulch workings in 1888. Water Rights records are not always specific, with rights for Rocky Gulch in 1852 and 1855 and Kanaka Gulch in 1883. However, the county has multiple Rocky and Kanaka gulches.

As the later decades of the 19<sup>th</sup> Century were approached, Crawford (1894:277) lists the Babcock (Santa Ana) Mine in Babcock Ravine, the next drainage north of Rancheria Gulch, with several shafts, drifts, and tunnels. This was operated by H.C. Babcock. Other nearby quartz gold mines of the time, one with a 10-stamp mill, are also listed for the Cottonwood District by Crawford (1894:279, 290, 291). The Amazon (quartz) Mine in the project vicinity is listed by Crawford (1896:386) with open cuts and a 10-stamp mill on adjoining property. C.B. Jillson and J.O. Jillson of Rancheria Gulch workings are listed as owners. The Jillson Mine can be found in Rocky Gulch on the USGS 1955 Hornbrook quadrangle along with the McCavik and Olsen mines in upper Rancheria Gulch. O'Brien (1947:130) lists the California American Mining Company owned by the P.J. McCavick estate as occurring in this general location with quartz stringers and narrow veins occurring in andesite.

In 1902 within the upper reaches a half-mile to the northwest of the study sites there was surveyed and patented by Herman Mattern et al. the Wabana Group of Mines. On the survey plat there is shown many claims (likely including the later McCavik, Olsen and Jillson mines), incorporating those at the very western end of the study location, the Copper Queen claim, and the Yreka to Oregon Road via Anderson's Ferry. Pertinent to this discussion is the naming of Dutch Gulch for the drainage where the archaeological research took place. It is possible this nomenclature also involves the drainage labeled Dutch Gulch to the south of the site area on the opposite side of a prominent hill. Perhaps both named streams diverge from the mother drainage uphill splitting into two smaller streams downhill on opposite side of this major knob. This would account for the name applied to the study drainage by the local "old timer" who visited the project.

Other historic records of possible relevance include the Government Land Office plats for the township (47N, 6W). The 1856 map illustrates the Oregon Road close to today's Hornbrook along with Bell's Ferry. The updated 1876 plat notes the Oregon Road as the Emigrant Road from Oregon (also the Siskiyou Trail) and Jas. Bell's Hen House. This emigrant road bypassed the study location going around the east side of nearby Black Butte. However, the "Stage Road from Yreka via Anderson's Ferry" (on the Klamath River less than a mile below Rancheria Gulch) goes through the west edge of the study locality. Carson's Field and a flume are shown just north less than a mile above the study sites. A Siskiyou County "History and Happenings" website notes Rancheria Gulch as written in the January 29, 1880, *San Francisco Bulletin* as the location of erection of a five-stamp mill<sup>1</sup>. Of course, this could be referring to Rancheria Creek.

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<sup>1</sup> <http://historyandhappenings.squarespace.com/siskiyou-county/?currentPage=5>

Ösburger Gulch opposite the mouth of Rancheria Gulch was also the location of two miner's cabins dating from the early 1900s with a suspension foot bridge crossing the river. These recently burned (2016) cabins had been moved downriver from the late 1890s mill town of Klamathon upriver a few miles. Remnants of the bridge were still hanging across the river in the 1970s. These remains were eventually removed for safety concerns. The 15' 1955 Hornbrook Quadrangle shows two structures and at least five differing mine symbols where this bridge would have led at and just up from the mouth of Rancheria Gulch.

### **Research Considerations**

The basic approach to the two adjoining sites was to better understand the complexity or lack thereof concerning the surface artifact scatters and features visible that were being looted and damaged. This testing program also offered an opportunity for public involvement, in this case in a Passport-in-Time investigative project involving 17 volunteers and BLM staff over five days (June 11-15, 2018). Some individuals were only there for part of the work. Teams were divided between the two sites and metal detecting and limited sub-surface testing were components of the work.

There was not a rigorous research design applied to the work at either site other than optimistically trying to answer basic inquiries centered on further management and research such as regarding questions of chronology, site function(s), ethnic affiliations and contacts, architecture, subsistence, consumer choices, trade/exchange, status, health/hygiene, site formation processes, level of disturbance, technology, landscape use, relationships between sites, culture change-interaction, demographics, and gender/age. Some of these overlapping topics are no doubt challenging or not reachable with limited testing, if at all. But they are topics to ponder with the field approach and subsequent analyses and write-up towards a meaningful dialogue on the locality's past human actions and lifeways.

### **Part 1 Rancheria Gulch Hamlet**

The upper site (Reed Mining Complex or, more proper, Rancheria Gulch Hamlet) (BLM No. CA-030-1906) was generally definable by scattered artifacts and features in an open field with mine tailings on the northerly side and an incised drainage on the southerly side. Brush and juniper bound the easterly and westerly sides (Figure 2 and Figure 5).



**FIGURE 5: REED'S MINING COMPLEX OR RANCHERIA GULCH SITE LOOKING EAST TOWARD BLACK MOUNTAIN (PHOTO 2019)**

The principal investigative technique (other than the examination of surface features and artifacts) was to see what metal detectors would reveal in a sampling procedure recognizing the inherent biases of such an approach. In excavating metal finds, other artifacts or remains could and were discovered (all generally within 10-15 cm of the surface). The opportunity was there to examine wide swaths of the open site. The open area measures approximately 125 m across and has juniper encroaching on all sides. To facilitate this process, the open area was gridded into 25m x 25m squares in a magnetic north-south and east-west direction using distance measured by a tape measure on the slightly sloping ground, not horizontally (Figure 6). A large copper rod was used as the grid datum, one that could be seen from the site below for mapping purposes. The corners of units were measured in by tape measures and compasses with pin flags marking corners. There were 12 units established comprising the majority of the flat in a grid with five units on the westerly line of units followed by four units to the east and then three units on the most easterly side with Unit 1 on the southwest end and Unit 12 on the northeast end (Figure 4). There are fewer cultural remains extending beyond the grid, but the main site complex was incorporated. The units were numbered consecutively 1-12. Since not all units were likely to be investigated, each number was placed on a small piece of paper and placed in a hat. Then numbers were drawn from the 12 to start the field process. Units 1, 4, 9, 10 and 12 were completed with the teams as discussed below.

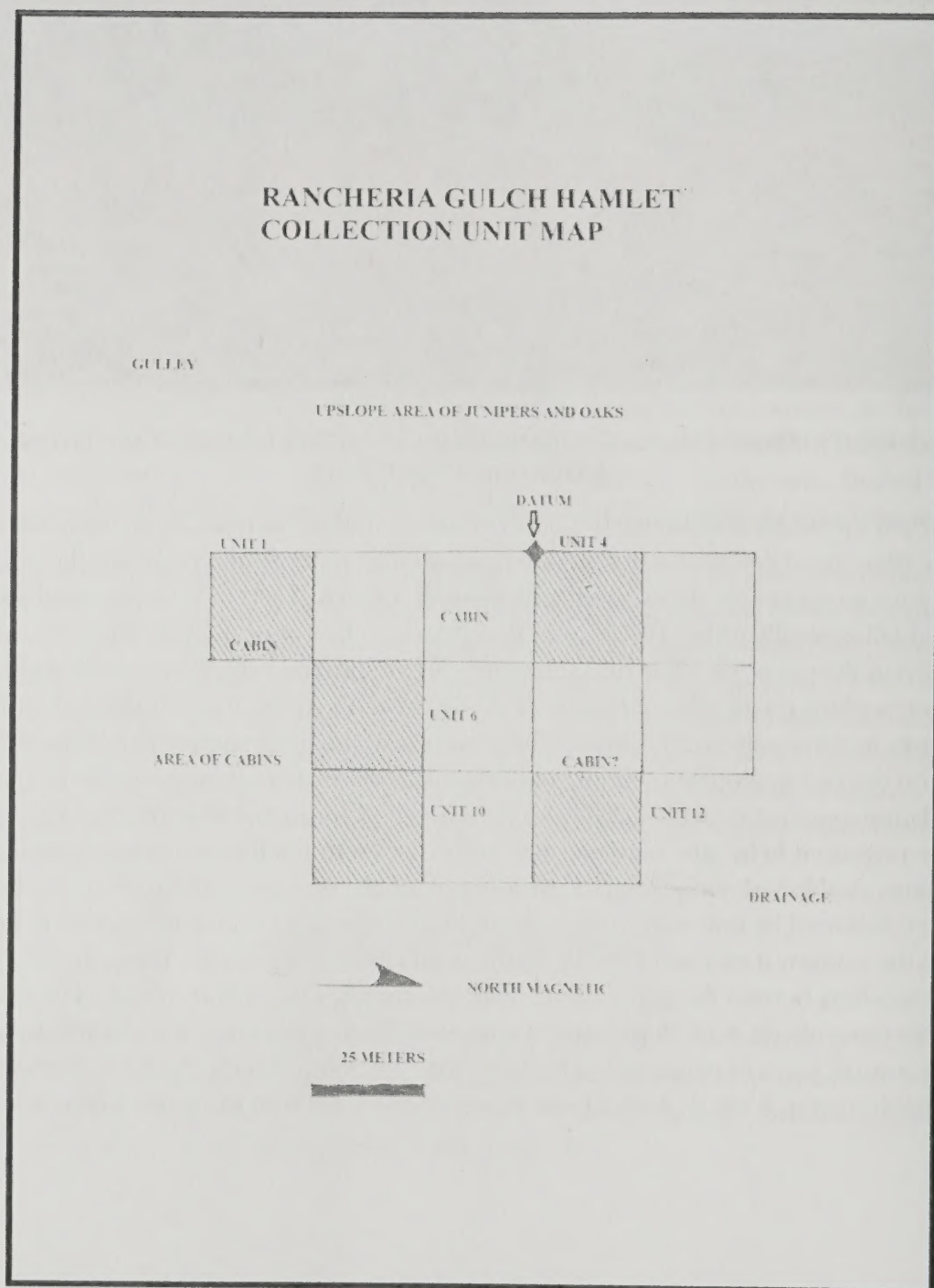
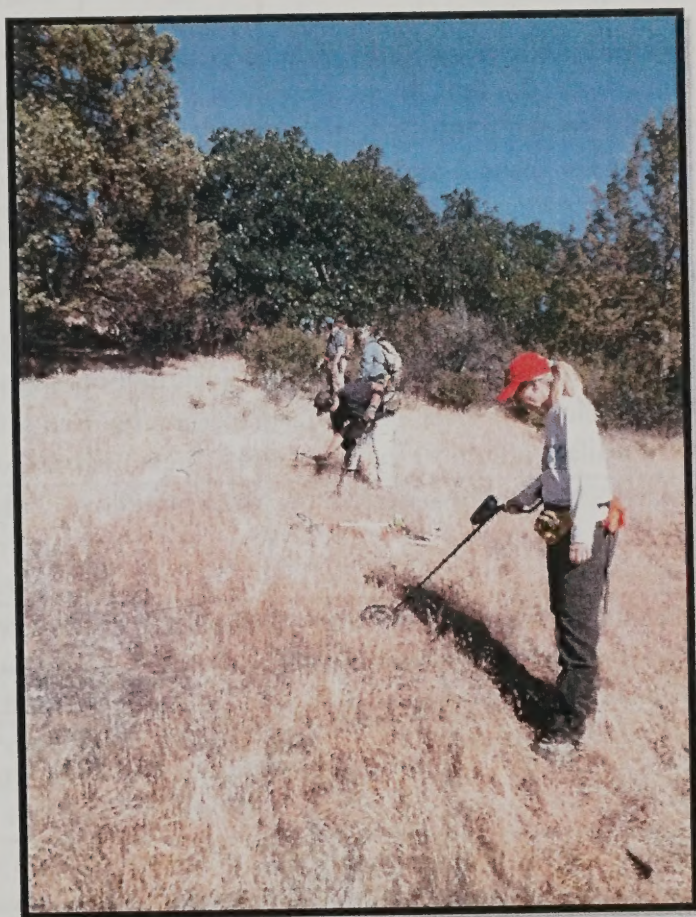


FIGURE 6 : PLAN VIEW MAP OF SITE AND UNIT GRID WITH COLLECTION UNITS SHADED  
(MINI EXCAVATION UNIT NOT SHOWN)

For each metal detecting unit, a crew of about 10 lined up and swept in their corridor to the opposite end of the unit, back and forth to cover all ground with several metal-detectorists completing cross-sweeps to pick up other items (Figure 7). Surface artifacts were also noted.

Subsurface hits were pin-flagged, and a companion participant dug the find. Other members recorded the finds on forms, and photographs were taken of select artifacts. Unusual finds, those not identifiable in the field, or museum-quality finds were bagged and labelled for collection. These finds were later catalogued as shown in APPENDIX 2. Because of the multitude of small metal scraps and nails, some detectorists used a higher discrimination on their machines. In essence, each unit represents a sample of the sample, and deeper deposits are possible based on one 0.3 x 0.3 m unit excavated at an area of ash and high-density metal items in larger Unit 6 (see discussion below). Non-metallic subsurface finds were documented as were metallic finds. Discoveries are listed in APPENDIX 2. Field notes for each unit's attributes and recovery are offered in following.



**FIGURE 7: METAL DETECTOR WORKERS BEGINNING SOUTH SWEEP IN UNIT 4**

Unit 1. Soil on the 5% slope of the field was a gravelly, crumb, loose to slightly compact strong brown (Munsell 7.5YR 4/4-4/6) loam to clay loam (dry) with charcoal flecks. Artifacts were found from the surface to at least one foot in depth, as was the case in all units. The north half of the unit had a heavy concentration of artifacts, including nails. Perhaps 10% of the nails encountered were tabulated. Footing stones and a flat bench along with many nails suggest this was a cabin location.

Unit 4. Soil was a gravelly clay loam, slightly hard of similar color to Unit 1. Artifacts were dispersed throughout the unit.

Unit 6. Soil was like the above units, noticeably hard, with scattered charcoal pieces. A perceptible ashy area with a concentration of nails was found in the northwest corner of the unit. One to two structure pads appear evident. Part of a 1-quart cast iron pot was found here 50 m from a matching piece. It was estimated that 20% of the nails present were tabulated. A mini unit, designated excavation Unit 1, was placed within the ashy area. No other excavation units were dug in this hamlet area.

Unit 10. No difference in soil was encountered in this unit compared to the general soil description above. Slight mounding of unknown derivation occurred near the center of the unit. Nails were found more concentrated near the northwest corner of the unit, perhaps from a nearby structure.

Unit 12. Soil was like that within the above units with 5% cobble content. A historic lateral road to the main stage road uphill crosses the unit. In the northwest portion of the unit the soil is softer and ashy in places, almost midden-like, with a heavy artifact concentration including bone remains. Structure pads do not seem to be aligned along the road, although several are close to the road (see Figure 1).

### Chronological Questions

The archival study demonstrates mining from the 1850s or at least the 1860s into the 20<sup>th</sup> century with known mining claims locally present. The artifactual information seems to support that record as can be viewed in Table 1. If these datable artifacts can be used as a proxy for site use and with a consideration of artifact retention for a few years, there appears to be a concentration of use from the mid to late 1850s well into the late 1870s, with sporadic use thereafter.

TABLE 1 : DATABLE ARTIFACTS WITH REFERENCES BY UNIT

UNIT	ARTIFACT	DATING	REFERENCE
3	Ferrous Eley Brothers Percussion Cap cannister lid	1850-1860s+	<a href="http://En.wikipedia.org/wiki/Eley/Brothers;">En.wikipedia.org/wiki/Eley/Brothers;</a> <a href="http://forum.cartidgcollectors.org/eley_percussion-cap-tins-with-raised-lettering/32199/3">forum.cartidgcollectors.org/eley_percussion-cap-tins-with-raised-lettering/32199/3</a>
1	0.50 caliber bullet	Post 1866	William Jarrett and A.F. Stoeger 1989: Development of the Springfield Service Rifle
1	0.22 BB cap	Post 1845	<i>Wikipedia</i> .22BB
1	Federal Cartridge Co. cartridge	Post 1922	Vinson 1968:94
1	0.44 Henry Winchester cartridge	1860-1920	Berge 1980:229

4	Dr. Vanderpool aqua medicine bottle	ca. 1890s	<a href="https://www.worthpoint.com/worthopedia/1890s-dr-vanderpool-cough-consumption-1799...">https://www.worthpoint.com/worthopedia/1890s-dr-vanderpool-cough-consumption-1799...</a>
4	0.44 centerfire cartridge	Post 1875	<a href="https://en.wikipedia.org/wiki/.44-Remington_Centerfire">Wikipedia.org/wiki/.44-Remington_Centerfire</a>
4	Peter's Quick Shot 16-gauge shotgun shell base	1897-1935	Vinson 1968:91; oldammo.com/february18htm
4	Cuprous boot heel protector with ferrous boot nails	Pat. November 29, 1859	Date stamped on artifact
9	Harmonica reed	Post 1820	Harmonicatunes.com
9	Oil can faucet lid	Post 1876	Patent 185,158
9	12-gauge U.S. Defiance shotgun shell base (U.S. Cartridge Co.)	1861-1930s+ Likely a later shell	Vinson 1968:92-93
9	T.S. and J. Mayer ceramic maker's mark	1843-1855	Gooden 1964:124, Practzell et al. 1983:52-53
9	Double Happiness Chinese bowl	1850-1870s+	Choy 2014:2, Felton et al. 1984:41
10	Ground edge percussion cap	ca. 1820/22-1870s+	<a href="https://en.wikipedia.org/wiki/Percussion_cap">En.wikipedia.org/wiki/Percussion_cap</a>
10	Hole-in-cap cannisters	ca. 1830-1904+	Rock 1984:97-111
10	0.36 lead pistol ball	Likely pre-1870s	See percussion cap discussion above
10	0.22 lead bullets	Post 1871	Wikipedia.22 Long Rifle
10	Automobile hood	Early 20 <sup>th</sup> century	
12	Clothes buckle	1855	"Patented 1855" embossing
12	Aqua Hall's Balsam	Post 1850 into at least the 1870s	Fike 1987:24; Figure 63

	medicine bottle		
12	Lead seal	18 <sup>th</sup> -19 <sup>th</sup> century	See McMahon 2003 and Davis 2014
12	Chrome-colored pottery	Common after 1830	<a href="https://www.jefpat.org/diagnostic/Post-Colonial%20Ceramics/PaintedWares/ChromeColor...">https://www.jefpat.org/diagnostic/Post-Colonial%20Ceramics/PaintedWares/ChromeColor...</a>
General surface	Ayer's Sarsaparilla Compound	Post 1858	Hoyt and Hoyt 2018

### Artifact Analysis

Efforts were made to identify artifacts in the field (or through later photo analysis) as collecting materials was minimized. Select artifacts for museum curation and/or identification through subsequent studies were saved. A listing of finds from the Reed Complex by unit (except for nails) can be found in APPENDIX 2. The artifacts located have been tabulated by functional context into seven categories: Food and Drink, Personal Effects, Architecture, Equipment, Miscellaneous, Reuse, and Unknown (Table 2). The fragmented nature of the materials examined placed some limitations on this process. For instance, if a group of canister fragments or bottle shards of the same color were found together, each grouping was counted as one entry. Modern bullets are not enumerated in the function table. Many sheetmetal and strap pieces were assumed to be equipment, but they may also be products of reuse. A best guess was exercised for can and bottle/jar parts without labels as there are both food cans and tobacco cans likely present, and glass containers can include food items as well as liquor/medicine. The inventory is obviously biased toward metal items. However, where non-metal items came up in the digging or they were on the surface, these are included. Bearing the recovery biases in mind, the data in the authors' judgement still provide a sensible vignette of the culture history and a sample of proposed behavior expressed here in Rancheria Gulch (see Table 3).

TABLE 2. ARTIFACT ASSIGNMENT BY FUNCTION

FUNCTIONAL ASSOCIATION	ARTIFACT CLASS/TYPE
Food and Drink	Examples: Food cans, food and non-alcoholic bottles and jars, eating and serving utensils, coffee mills, cooking ware, ceramic dinner set components (plates and bowls, etc.) and glass ware, bone, and seed refuse
Personal Effects	Examples: Buttons, buckles, shoes and boots, luggage/satchels, coin purses, writing supplies, pocketknives, grooming aides; guns, caps, and ammunition; medicine containers, liquor bottles, pipes, tobacco tags and tins, opium paraphernalia, musical instruments, umbrellas and parasols, clothing, small storage boxes, jewelry
Architecture	Examples: Nails, wire staples, bricks, lumber, wire, screws, bolts, washers, window glass, doorknobs, padlocks, door locks, keys, hinges, lamps, candlesticks, stoves, sheet metal
Equipment	Examples: Box strapping, shovels, picks, crevicing tools, buckets, rocker parts, horseshoes and horseshoe nails, animal grooming equipment and tack, sewing needles, lead sheeting, wagon parts, woodworking and other tools, gold pans, dishpans, blacksmith tools and stock
Miscellaneous	Examples: obsidian artifacts, lead fragments, powder can, hand forged nail, car hood, oil can, brass screw cap
Reuse	Examples: Perforated cans (sieves), sheet metal with numerous perforations, cut tin sheets and canisters
Unknown	Examples: Lead box, cast iron fragments, metal rod, small cuprous cup, tin fragments

TABLE 3: APPROXIMATIONS OF COLLECTION UNIT ARTIFACTS BY FUNCTIONAL CONTEXT (NAILS EXCLUDED)

UNIT	FOOD AND DRINK	PERSONAL EFFECTS	ARCHITECTURE	EQUIPMENT	MISC.	REUSE	UNKNOWN	SUM
1	26/39 %	14/21%	7/10%	14/21%	3/5%	2/3%	1/1%	67/
4	47/10 %	15/13%	10/8%	22/18%	11/9%	7/6%	7/6%	119/
9	90/11 %	40/20%	11/5%	33/16%	3/2%	12/6%	15/7%	204/
10	25/43 %	4/7%	5/9%	14/29%	2/3%	1/2%	7/12%	58/
12	54/13 %	17/14%	4/3%	33/30%	5/4%	5/4%	3/2%	121/
SUM	242/43 %	90/16%	37/6%	116/20%	24/4%	27/5%	33/6%	569/

### Artifact Distribution and Functional Context by Unit

An examination of Table 3 illustrates a relatively high level of conformity of functional categories across the site. Scattering of some larger artifacts for some distance was evident but, nevertheless, spatial variations based at least in part on structure placements is evident as in the nails and architectural components such as door hardware. Below, is a brief discussion of the discovery highlights from each treatment unit (see APPENDIX 2 for overall listing of finds).

#### Unit 1

This unit was clearly in the vicinity of at least one domestic structure. As with the other units, the artifactual material, while not as plentiful as other units, exhibits considerable breakage probably from trampling and disposal practices. Likewise, metal scrap from tin sheets, box strap segments, wire pieces, and canisters is abundant. Glass and ceramic items are well fragmented. There are earlier materials present such as lead pistol balls and a ceramic vessel section. Equipment was apparently being repaired in this vicinity. As in other site locations, there was a loss of cast iron items from stoves blowing up and containers breaking. Lead sheeting and scraps suggest there may have been pistol ball manufacture as one ball has the sprue still present. A sewing needle implies work on canvas such as for tents or roofing, or on clothing, sack cloth, etc. Riddle plate remnants indicate a mining rocker was also in use nearby. As throughout the site, tobacco and medicinal/liquor beverages were consumed. There is no determination of bottle reuse, but this seems likely. There was no clear evidence of Chinese-American presence based on the unit data. Limited Native American Indian use occurs on the flat.

#### Unit 4

This location demonstrates both local labors as in repairs of equipment and possibly living quarter construction and dismantling with artifacts from multiple time periods evident. Reuse of materials is apparent such as in sheet metal handling. General trash disposal as observed throughout the site suggests less than tidy conditions. Small personal items imply both loss and discard as in the button, buckle, boot support, and pocketknife. Expectedly, horses and/or mules are being employed. Bottled and canned items indicate domestic residency and sustenance and recreational-based consumption.

#### Unit 9

This was the richest unit of the site in terms of material goods reflecting several closely juxtaposed structure pads overlooking the drainage to the south. Considerable trash deposition, structure construction and dismantling, and workshop equipment are evident. Possibly trash burning occurred in this vicinity. Cast iron artifact breakage is abundant. Food, beverage, and indulgence remnants are plentiful, and one locket could imply a woman was present here. Evidence of Chinese-American use might denote overlapping residency, less likely coeval occupations considering the discrimination the Chinese-Americans were subjected to during the 19<sup>th</sup> century.

Tin sheeting evidence may indicate construction and repair of sluice boxes, rockers, and house roofing or siding. Because of ash deposition, presence of Double Happiness bowl sherds, and a dense, co-mingled artifact location within the larger unit, a 0.3 m x 0.3 m unit was excavated to 20 cm revealing white improved (?) earthenware sherds, fire-affected glass shards, a rubber boot sole, burnt animal bone, flat (window?) glass, broken nails, and various colored glass shards. The presence of rich sub-surface deposits here and at other areas of the site demonstrate that there is a valuable archaeological buildup worthy of future research (Figure 8).

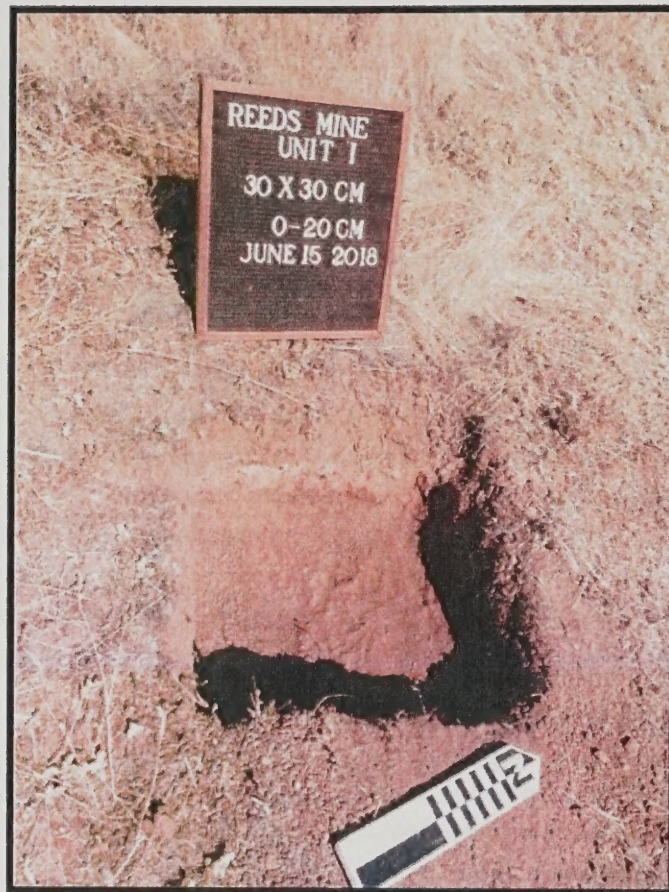


FIGURE 8: TEST UNIT 1 IN RICH ARTIFACT AND ASH LOCATION (NOTE ASH LENS IN PROFILE)

#### Unit 10

At least some of the canister pieces appear early with irregular hand soldering along the side seam. Generally, canister pieces are small in this unit and throughout the sample. Staples and possibly the wire nails indicate a former fence in the area (probably 20<sup>th</sup> century), and the car hood demonstrates, not surprising, people here well into the 1900s. The hand-forged horseshoe (and other possible blacksmith scrap in the site) suggests some blacksmithing in the area. A broken shovel in this unit and other artifacts on the flat correlate with the mining activities not far off as apparent in the tailings nearby. The harmonica reed implies music and entertainment, but why was the instrument broken? Or did it become unusable and was discarded and pieces scattered over time? The senior author has noted such reeds at one other northern California mining community and along an emigrant trail. Broken, used, and discarded metal trash dominate the discovered items in this unit including those from several cast-iron vessels. One vessel part is 6.25 meters from a matching piece indicating some artifact movement (surficial) in this vicinity during or following breakage/discard.

## Unit 12

This proved to be a relatively productive unit with a clear ashy deposit that may have some depth. Included within this ashy residue was a young cow or calf bone most likely discarded after a meal. An opium tin fragment suggests Chinese-American presence in the vicinity. A cabin pad appears to be located just west of the unit, and a cluster of nails was discovered near that pad within the study unit. Interestingly, a brass instrument cap was found suggesting a surveyor's device may have been used here at one time. Some artifacts indicate an early use of this unit area as seen in Table 1. There are the usual findings of scrap metal items like strap pieces, shovel parts, wire, and cut and folded tin sheeting. Domestic activities such as evident in two separate coffee grinder remnants and many canister pieces is unmistakable, and personal items comprise boot parts, a comb, buckles, and possibly an umbrella or parasol stay. Curiously, a fancy coin purse remnant was discovered. Could this be evidence of a woman living or visiting here? Why was this lost or discarded? Medicine bottles and unidentified bottle and jar shards are found at this spot. The cut tin demonstrates the ersatz nature of artifact use by the occupants. And the door latch and key (Figure 9) reveal a concern for safety and theft.

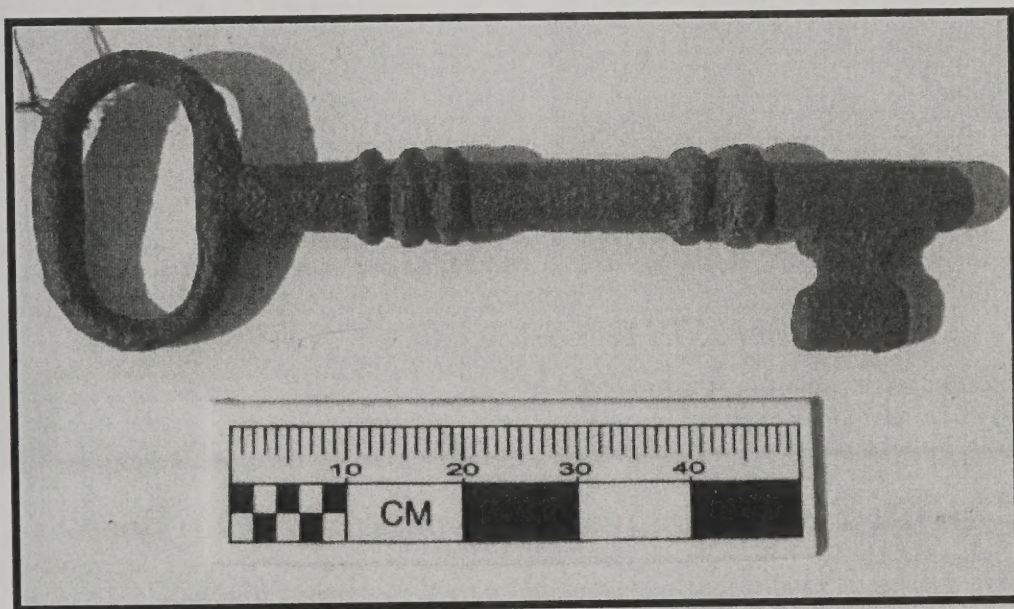


FIGURE 9: CAST IRON SKELETON KEY

### **Select Artifact Discussion**

Some of the key artifacts and artifact groups are discussed below. All but the nails are listed in APPENDIX 2. The recovery provides a rather robust sample of metal items that occur at the

Rancheria Gulch hamlet. The non-metal artifact observations are less representative of what was present lacking a substantial sub-surface data recovery program.

### Canisters

One of the most common artifacts at the site are the canisters, almost exclusively in the individual use size range. Most likely evident are baking powder, cream of tartar, borax, or spice friction lid cans; sardines/lish and meat canisters, fruit and vegetable cans, and oil cans (Figure 10, Figure 11 and Figure 12). Tobacco cans also seem apparent, such as snuff cans. Specialty canisters as for firearm caps and gun powder are likewise distinct. The site contains hundreds of these generally flattened and fragmented artifacts, and many more were likely thrown into the nearby drainages.

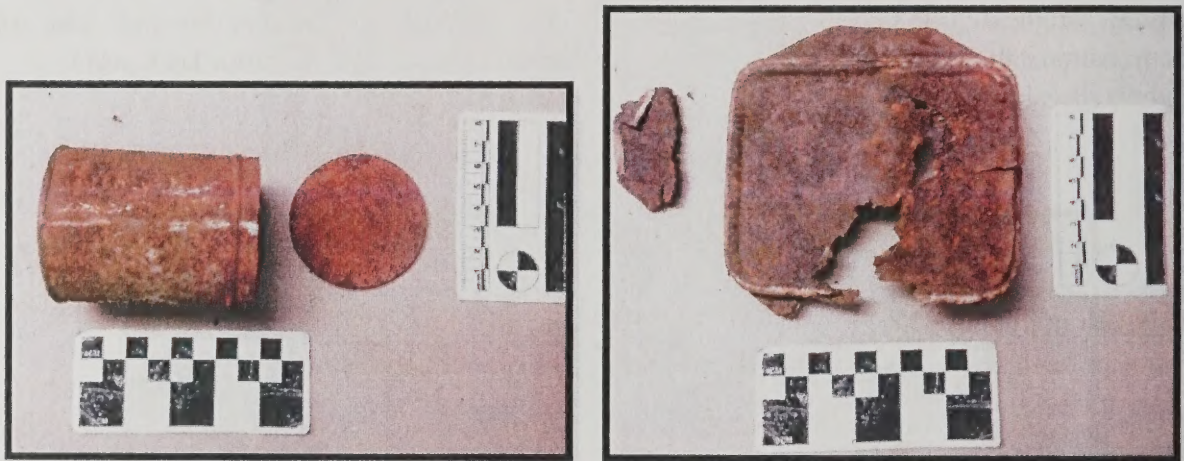


FIGURE 10: SMALL CYLINDRICAL CANISTER AND SARDINE CANISTER

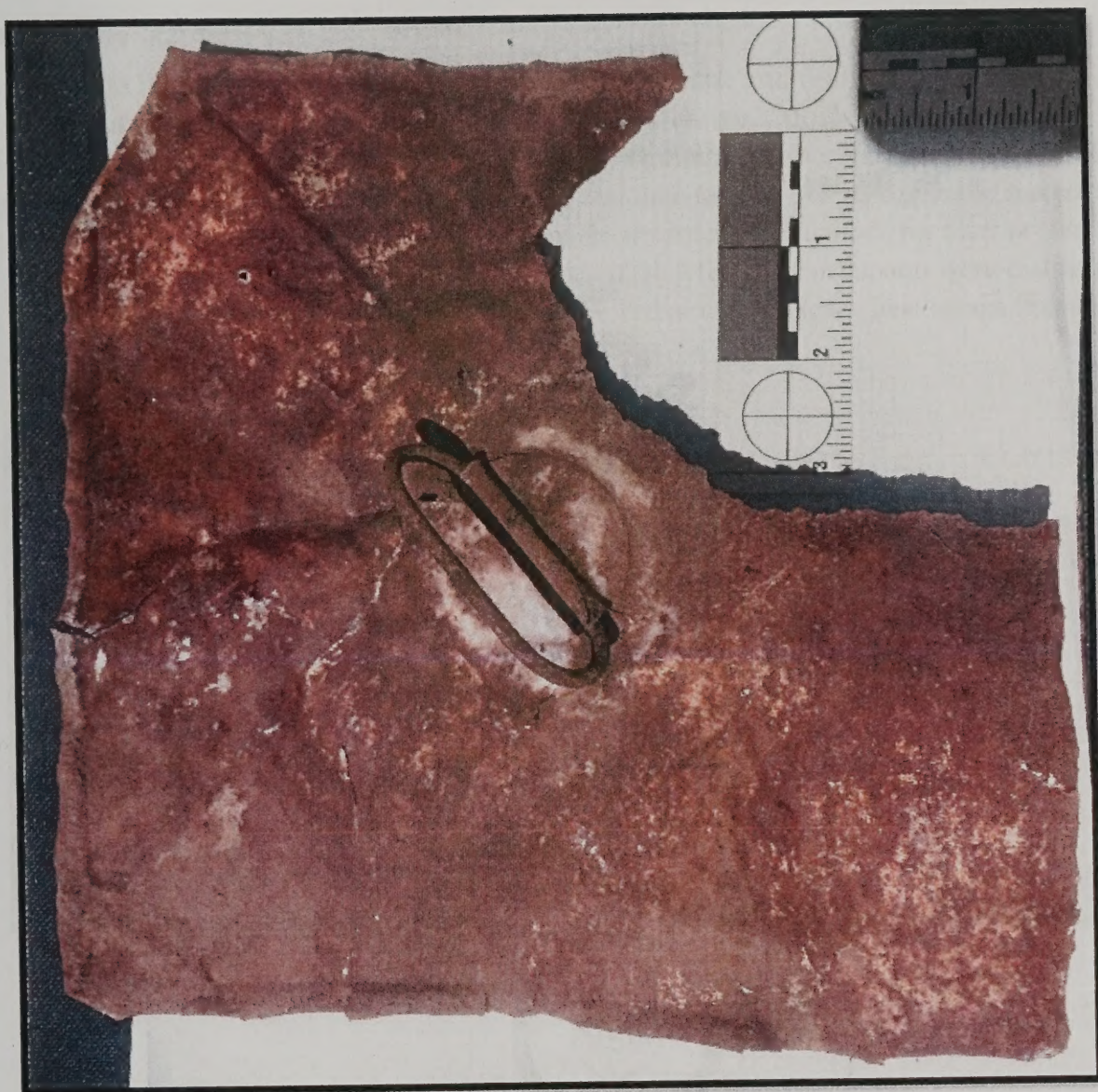


FIGURE 11: LID TO A FERROUS 2 ½ GALLON CANISTER WITH D-HANDLE

G. W. BANKER.  
OIL-CAN FAUCET.

No. 185,158.

Patented Dec. 12, 1876.

Fig 1.



Fig 2.

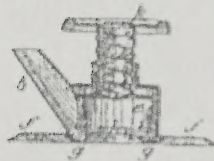


Fig 3.



Attest:

*C. F. Trill*  
*Appleton N. York*

Inventor:

*G. W. Banker*  
*By S. E. Somers & Co.*  
*Attorneys.*

THE PATENT OFFICE

FIGURE 12: PATENT DIAGRAM FOR AN OIL-CAN FAUCET AS FOUND AT THE SITE

## Firearms and Firearm-Related Accessories

Gun use in this flat is evident in pistols balls, cap artifacts, rimfire and center-fire cartridges, and shot shells that could date from the Gold Rush into modern times. Most common is the 0.36 caliber pistol ball. But also present are 0.22, 0.44, 0.50 and other caliber bullets and 12 and 16 gauge shot shells bases. Table 1 lists some cartridges and date ranges. No recognizable gun parts were recovered. Protection and game procurement are assumed explanations for their presence. The incidence of various lead items within units suggests that the early occupants were casting their own bullets. At least one black powder can was discovered along with lead sheet scraps (Figure 13).



FIGURE 13: LEAD SHEETING SCRAPS AND BLACK POWDER CAN WITH LEAD TOP

## Glassware

The fragmented nature of the glass artifacts created difficulties in identification (Figure 14). Flat glass in association with many nails strongly indicates window glass. Medicine bottles from earlier and later contexts are evident based on their manufacturing date ranges and presence of a pontil mark on one bottle base. A partial crystal shot or medicine dose glass is interesting, but fancy crystal and other glassware seems largely absent. It does not appear that glass lanterns are present with candlelight being employed (no identifiable base or globe shards). Glass food containers and a drinking glass are present as are liquor bottle remnants of 19<sup>th</sup> century vintage. Many variations in color and base, finish and side and panel portions point to various differing products and manufacturers. The secondary finds of glass in the search for metal objects and the trampled remains of glass items on the surface would be well augmented by formal excavations.



FIGURE 14: MEDICINE BOTTLE SHARDS

### Ceramics

As with glass items, the ceramics were highly fragmented and found on the well-travelled site surface or in the excavation of metallic items. While one tin dinnerplate was discovered, there were also sherds of white glazed earthenware plates, bowls and/or saucers, and a pitcher of English manufacture present. A few of these sherds could be from white improved earthenware vessels. No evidence was found of serving vessels or toilet set remnants, no stoneware crockery, no terracotta, and no European or American porcelain. Sherds from a porcelaneous Chinese Double Happiness rice bowl were recovered. If there was a Chinese-American group nearby the ubiquitous Chinese brownware ceramic vessel sherds would be expected, but these were not noted in the metal-oriented work.

Two small fragments of earthenware polychrome or chrome-colored pottery were located, possibly from early ceramic retention. All ceramic finds generally fall within a mid to later 1800s-time range.

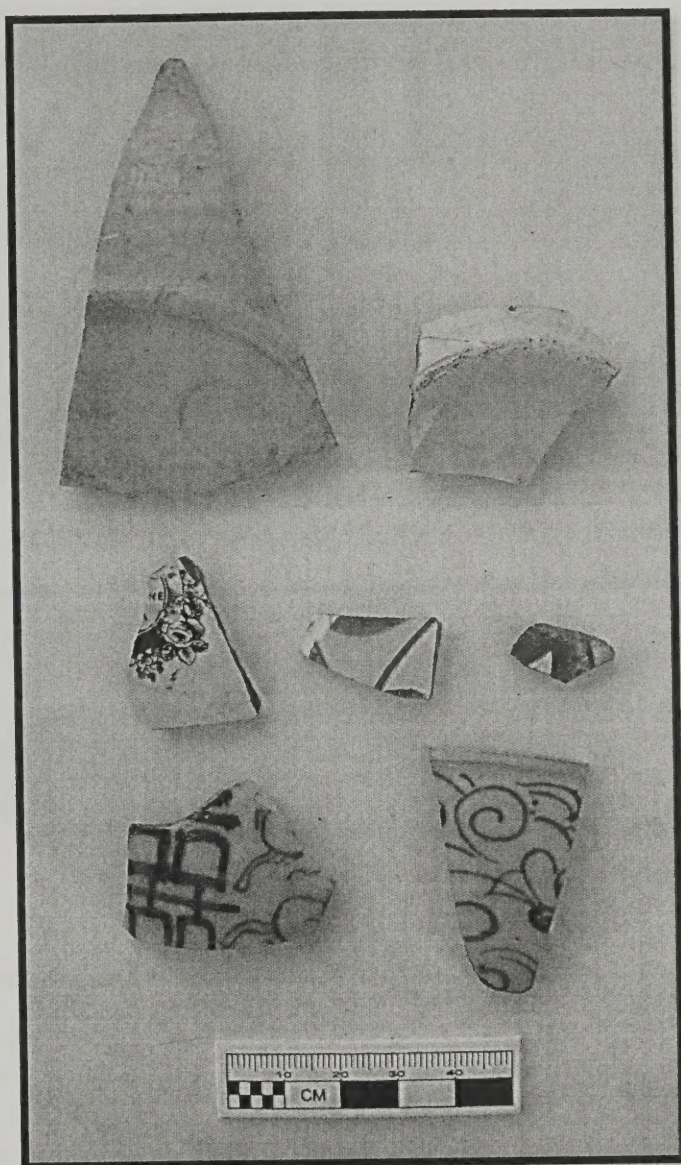


FIGURE 15: WHITE EARTHENWARE VESSEL SHERDS, POLYCHROME EARTHENWARE SHERDS, AND CHINESE DOUBLE HAPPINESS PORCELANEUS RICE BOWL SHERDS

### Cast Iron Cookery and Heating Artifacts

All study units had broken cast iron items variably including those from pots, pans, kettles, Dutch Ovens, and stoves (Figure 16 and Figure 18). Two matching pieces of a kettle were found in different units. It would appear stoves, such as a pot-bellied type, were used for heating. Cast iron vessels were apparently commonly used at the site for cooking and other heating tasks. Over the years breakage of these items was common it seems, likely from over-heating. Discard does not seem to have been very far from the residence. Other cast iron artifacts also occur at the site such as a skeleton key, coffee grinder parts, etc. (Figure 9 and Figure 17).



FIGURE 16: CAST IRON STOVE LEG, AND 4 QT. KETTLE PART



FIGURE 17: INTERIOR CAST IRON COFFEE GRINDER PIECE

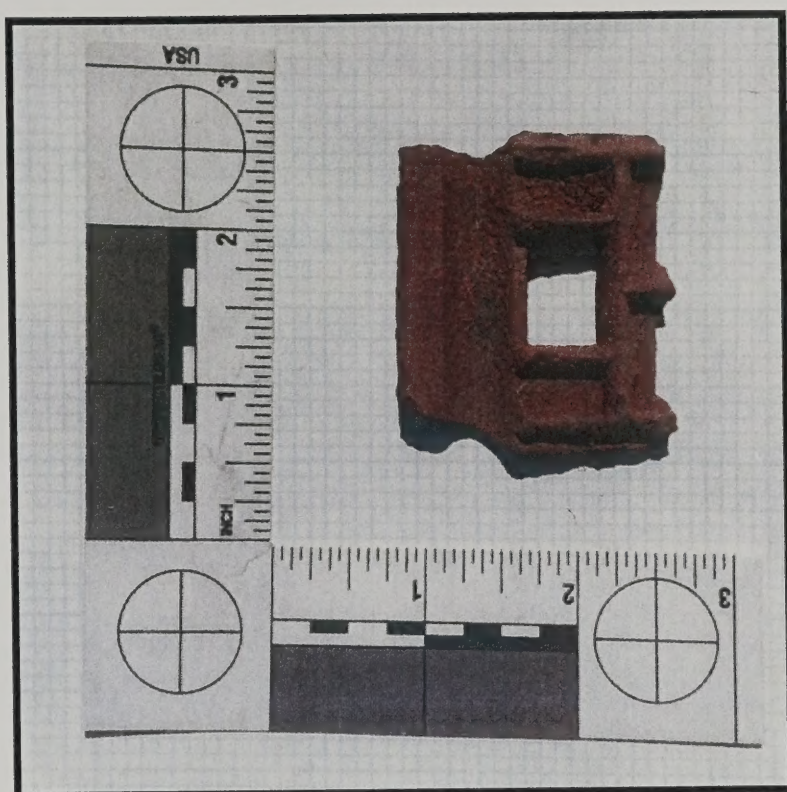


FIGURE 18: CAST IRON STOVE PART?

#### Cutlery/Flat Ware/Silverware and Ferrous Plate

Broken eating utensils included a three-pronged fork (prongs broken) with a wooden handle, a knife handle with cuprous pins for a bone, ivory or wooden handle, a dinner spoon end, a silver-plated flatware handle, and a plain flatware pewter handle (Figure 19). Broken eating utensils were clearly thrown out near the residences. One metal plate for food was also found (Figure 20).



FIGURE 19: CUTLERY REMNANTS OF WOOD, IRON, AND PEWTER



FIGURE 20: METAL DINNER PLATE

### Food Refuse

There was a scattering of domestic animal bones found during the artifact probes. Excavations of controlled units would likely produce informative results in this regard. Similarly, seeds might be recovered by careful screening and flotation methods.

### Personal Items

Some personal items are not discussed in this section such as armaments and tobacco/opium objects. Buttons, likely lost or broken and discarded, include small metal and porcelain ones, and a cuprous eyelet type with a decorative inset missing (Figure 21). These were probably shirt buttons. At least four suspender or other clothing or footwear buckles are represented (Figure 22). Boot/shoe vestiges, including rubberized or gum boot parts, are extant along with associated metal taps, an insert, and a protective cuprous boot or shoe tip (Figure 23, Figure 24, and Figure 25). Extending the life of footwear again shows occupants' thriftiness. While the authors try not to demonstrate any male bias in their interpretations as all evidence at the site conceivably could be from male or female ownership, the general written records for the mines indicate a heavy male orientation. In this consideration, two items may have belonged to a male or female owner. These include a possible umbrella or parasol stay and a coin purse part (Figure 26 and 27). One cuprous comb part that may have had a male or female owner was observed, the only evidence of grooming (Figure 24). The cuprous locket (Figure 21) may infer female ownership. Other items of note

include parts of pocketknives and a harmonica reed (Figure 24). There were no watch or clock parts identified nor were there any obvious gaming pieces.



FIGURE 21: CUPROUS LOCKET AND METAL BUTTON REMNANTS (VISIBLE THREADS ARE MODERN)



FIGURE 22: FERROUS SUSPENDER AND BELT BUCKLES (VISIBLE THREADS ARE MODERN)



FIGURE 23: RUBBERIZED OR GUM BOOT SOLE AND BOOT INSET



FIGURE 24: BRASS INSTRUMENT CAP, FERROUS SEWING NEEDLES; CUPROUS BOOT OR SHOE TIP WITH FERROUS NAILS, AND CUPROUS COMB AND HARMONICA REED

N. SILVERTHORN.  
BOOT OR SHOE TIP.

No. 26,329.

Patented Nov. 29, 1869.

Fig. 1.

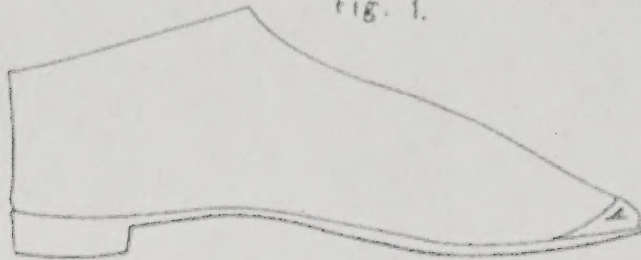


Fig. 2.

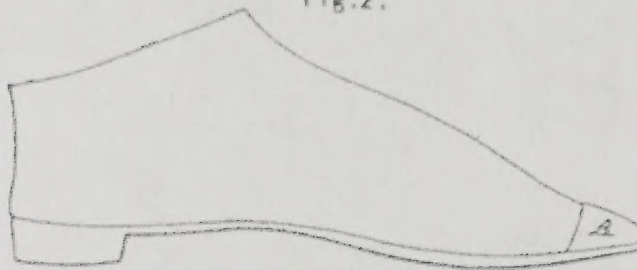
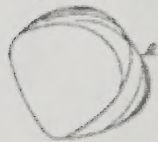


Fig. 3.



Witnesses:

*C. F. Higgins*  
*A. D. Snyder*

Fig. 4.



Inventor:

*Nathan Silverthorn*

FIGURE 25: CUPROUS SHOE OR BOOT TOE PROTECTOR PATENT (ALSO SEE FIGURE 24)

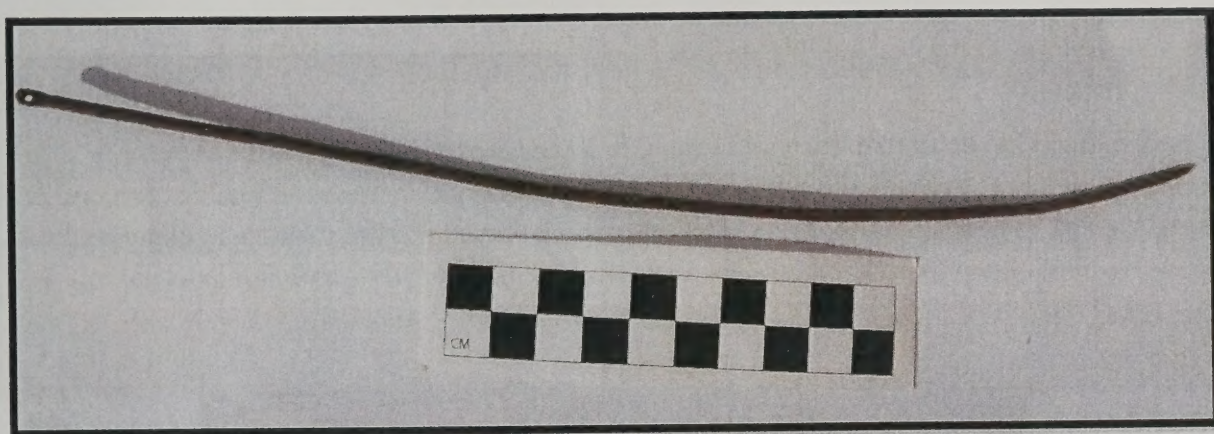


FIGURE 26: POSSIBLE FERROUS UMBRELLA OR PARASOL STAY



FIGURE 27: CUPROUS GOLD-GILDED AND FERROUS COIN PURSE SNAP TOP

## Animal Husbandry

The only indications of animal husbandry included a few horseshoes and horseshoe/muleshoe nails and some likely tack or saddlery items including a ferrous ring, several buckles (Figure 22, lower row), and a possible comb tooth. At least one horseshoe is from a larger work animal with calks present for extra traction (Figure 28). Cow bone is likely local or from an external butcher.



FIGURE 28: FERROUS HAND-FORGED HORSESHOE WITH TOE AND HEEL CALKS

## Mining Accoutrements

While gold mining was the obvious principal pursuit of the Rancheria Gulch inhabitants, direct evidence of such activities is difficult to discern in the residential complex. Remnants of riddles from rockers is the clearest support (Figure 29). Several tools such as a possible crevassing device (Figure 30) and a wedge (Figure 31) could be related to gold extraction along with shovel and bucket pieces (Figure 29 and Figure 32). The considerable construction and other debris at the site may in part be related to manufacture and repair of mining devices such as sluice boxes, rockers, flumes, etc. Gum boot parts also indicate possible mine outfitting where water was used in the gold recovery process. The scale weight likely was employed to weigh recovered gold. No gold pan remnants are apparent, important equipment not likely to be broken and discarded.



FIGURE 29: BROKEN SHOVEL AND RIDDLE PLATE PARTS ON LIKELY STRUCTURE FOOTING STONE



FIGURE 30: FABRICATED FERROUS CREVASSING TOOL?

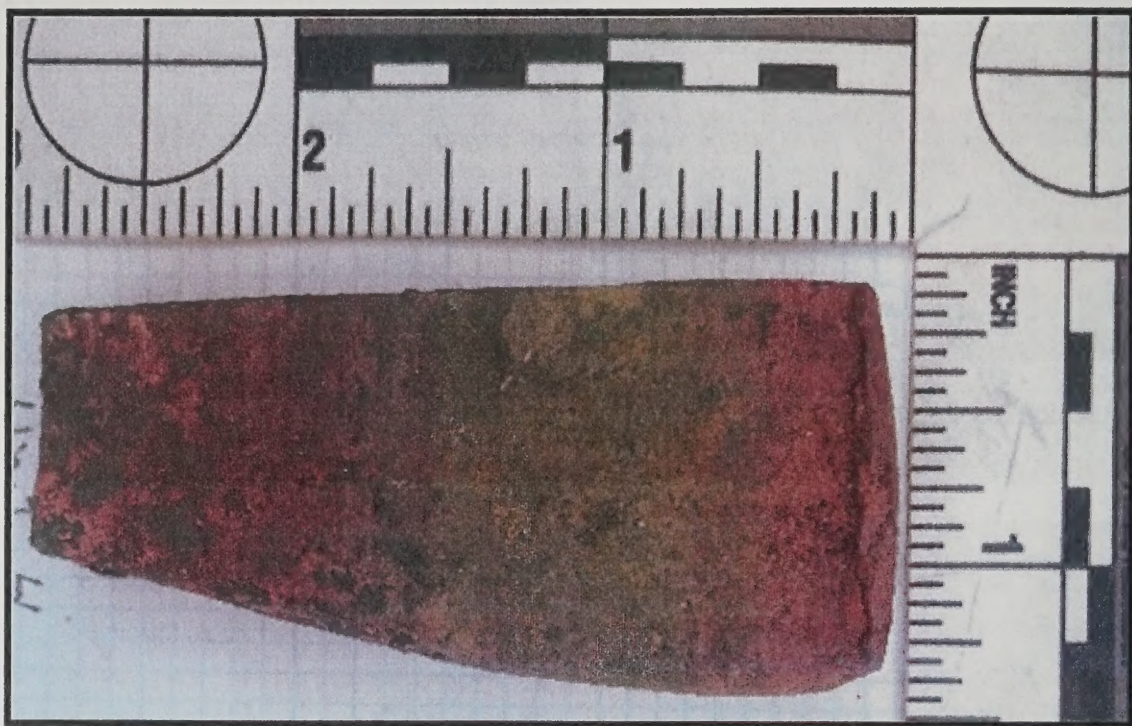


FIGURE 31: WELL-USED FERROUS WEDGE

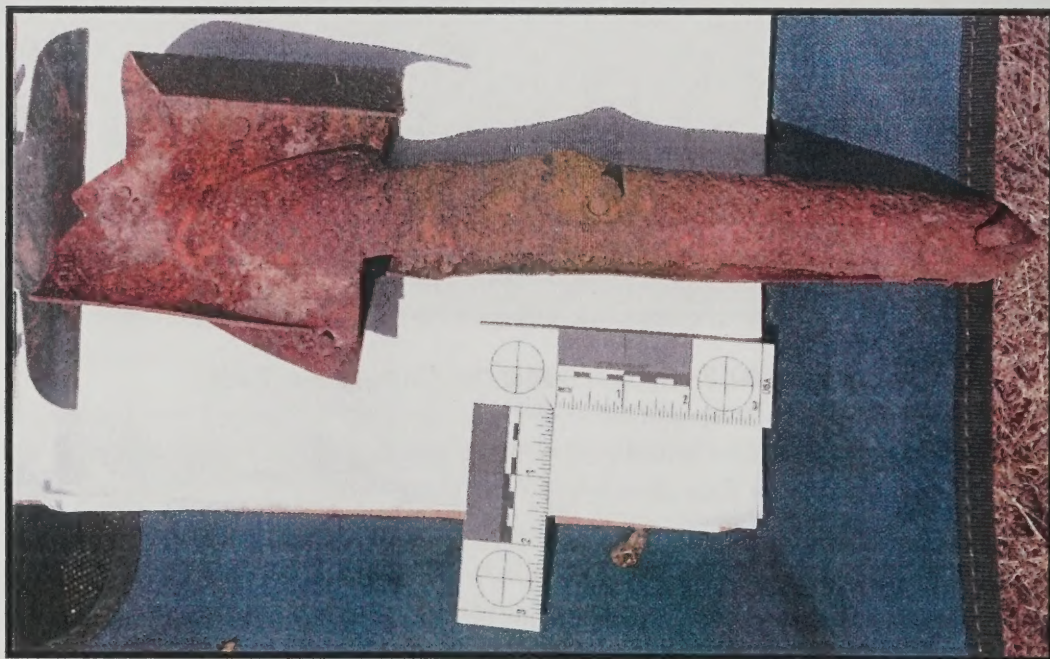


FIGURE 32: MODIFIED SHOVEL POSSIBLY FOR SCOOPING SOIL/SEDIMENT MATERIAL FROM SLUICE BOX

## Architectural Remnants

The presence of constructed flats, fastening devices like nails and screws, door lock mechanisms (Figure 33), a padlock part, key (Figure 9), a hand-made strike plate (?) (Figure 33), a hinge, footing stones (Figure 2 and Figure 29), and window glass demonstrate structures were constructed and removed from this site. Residential debris reveals that a number of these were dwellings. However, there are no chimney foundations like found for early structures within a few hundred yards on an adjoining ridge (See Discussion-Common Cut Rockshelter below). There are no roof jacks, although these could have been removed. There are no clear lantern parts, but one candlestick holder is accounted for. Salvage or retention may explain some absences of material remains. Even window glass is not prominent, but excavations could prove more fruitful in this regard. One window glass shard measured 3mm in thickness, a bit larger than the mean (1.45 mm) for window glass from the 1830s to early 1850s Indian Trade Store at Fort Vancouver (Hoffman and Ross 1975: 1, 60) where only a few samples were this thick at this early age. Obviously, once again more testing would be beneficial at Rancheria Gulch in this regard.



FIGURE 33: FERROUS POSSIBLE DOOR STRIKE PLATE AND LOCK MECHANISM PART

## Nails/Fasteners

Nail frequency and distribution are revealing. Nearly 800 were tabulated from the collection units. Those using the metal detectors did not always excavate what they determined to be nails or set their discriminators to avoid such finds estimating that they recovered 10-20% of those present in the units. Overall, the recovery is generally considered representative of the types and sizes here. It is very likely that there are many thousands present in the flat. Window glass, excavated pads,

footing stones, and door fixtures strongly suggest that a number of wooden cabins were present in the latter half of the 19<sup>th</sup> century. Variation by unit seems to coincide with locations where a substantial structure once stood. At least five locations show evidence on the surface of a structure pad, and there were likely others such as those with a wooden tent platform, frame, or canvas roof. Two chimney remnants at Common Cut Rockshelter and up the ridge from it indicate other 19<sup>th</sup> century structures close by.

Three-fourths of the nails were bent or broken suggesting salvage of wooden structures. Jensen's study (1980:46) of a 19<sup>th</sup> century mining complex in the Sierra Nevada also revealed almost exclusive use of common cut nails that generally pre-date 1900. (For instance, archaeological recovery of an 1897 church ruins in French Gulch, California near Redding revealed that 55% of the nails were still common cut with the remainder wire nails [Sundahl et al. 2000:51]. No such transition in nail type is present at Rancheria Gulch with rare instances of wire nails that were around, but expensive, in the latter half of the 19<sup>th</sup> century).

As to nail sizes, Jensen (1980:46) indicates that nails less than 6d were mostly used as small trim/finish nails; those in the 8d-12d range were most often sourced as interior and exterior framing nails in bat-and-board construction, and those greater than 12d were utilized for framing for post and beams. Vaughan (1986:60), based on local northern California contractor information, states that 2d and 4d nails are generally used for shingles; 7d to 9d for sheeting, and 12d to 16d for framing. Table 4 – 8 indicate that about 20% of the nails fall in the first category, for trimming, finishing and possibly shingle/shake roofing; more than half were in the framing category, and less than 1/3 in the post and beams use category. These sizes are clear indications of light or small cabins and possibly wooden pads and maybe frames for tent construction.

Also found at the site were construction-related wooden screws as shown in APPENDIX 2. In Unit 4 there was observed three Hungarian nails (sizes 8 and 14, not differentiated); a 5/8" brad, a 1 1/8" barrel nail, and four #10 cut tacks. Unit 9 recovery included a 3/4" and a 5/8" cut tack and two 2 5/8" trunk nails. Unit 12 added 13 cabinet nails; three Hungarian hob nails sizes 8, 14 and 18; a 1 1/4" brad, a 1 1/4" barrel nail, and a 1 1/8" trunk nail. No likely Chinese L-nails were found, as used in boxes and cabinetry.

TABLE 4 : UNIT 1 NAILS

SIZE/TYPE	3d-6d	7d-10d	12d-30d	40d-60d	Totals
COMMON CUT WHOLE	15	11	11		37
COMMON CUT BENT/BROKEN	23	57	37		117
COMMON CUT SHANKS					55
COMMON CUT HEADS					75
FINISH					
WIRE		2			2
TOTALS FOR COMMON CUT	38	68	48	0	229 (excludes shanks)

TABLE 5: UNIT 4 NAILS

SIZE/TYPE	3d-6d	7d-10d	12d-30d	40d-60d	Totals
COMMON CUT WHOLE	3	18	11		32
COMMON CUT BENT/BROKEN	2	18	19		39
COMMON CUT SHANKS					35
COMMON CUT HEADS					24
FINISH					
WIRE			3		3
TOTALS FOR COMMON CUT	5	36	33		95 (excludes shanks)

TABLE 6: UNIT 9 NAILS

SIZE/TYPE	3d-6d	7d-10d	12d-30d	40d-60d	Totals
COMMON CUT WHOLE	16	29	12		57
COMMON CUT BENT/BROKEN	46	139	67		252
COMMON CUT SHANKS					85
COMMON CUT HEADS					28
FINISH		5			5
WIRE	1				1
TOTALS FOR COMMON CUT	62	168	79		337 (excludes shanks)

TABLE 7: UNIT 10 NAILS

SIZE/TYPE	3d-6d	7d-10d	12d-30d	40d-60d	Totals
COMMON CUT WHOLE	1	7	6		17
COMMON CUT BENT/BROKEN	3	6	8		17
COMMON CUT SHANKS					33
COMMON CUT HEADS					16
FINISH		1			1
WIRE	2	5	2		9
TOTALS FOR COMMON CUT	7	13	14		50 (excludes shanks)

TABLE 8: UNIT 12 COMMON CUT NAILS

SIZE/TYPE	3d-6d	7d-10d	12d-30d	40d-60d	Totals
COMMON CUT WHOLE	3	11	8		22
COMMON CUT BENT/BROKEN	6	24	17	2	49
COMMON CUT SHANKS					55
COMMON CUT HEADS					14
FINISH	4				
WIRE		2			
TOTALS FOR COMMON CUT	9	35	25	2	85 (excludes shanks)

### Re-used Items

Frugal occupants likely re-used items such as bottles and re-fashioned some artifacts into other functions, the most common being tin canisters retained as containers or perforated for sieves and shakers, and tin sheeting cut and perhaps reprocessed for various tasks like roofing or siding, patching cabin holes, and fixing or siding rockers and sluices (Figure 34). One hand-forged tool from blacksmith bar stock may have been a crevassing tool (Figure 30). At least one large tin canister had a 10- gauge wire handle attached. Cut metal strap and band pieces from barrels and boxes were probably used for other purposes. There is no suggestion that nails were being re-used to any extent considering the limited number of complete nails and the lack of care in removing or using nails (see below), carpentry skills aside. Whole nails removed may, of course, have been re-used and later bent/broken. The red brick is an obvious site import with an unknown use, perhaps related to a cooking feature and indicative of a late Gold Rush or later brick manufacturing outlet, perhaps in the Yreka area.

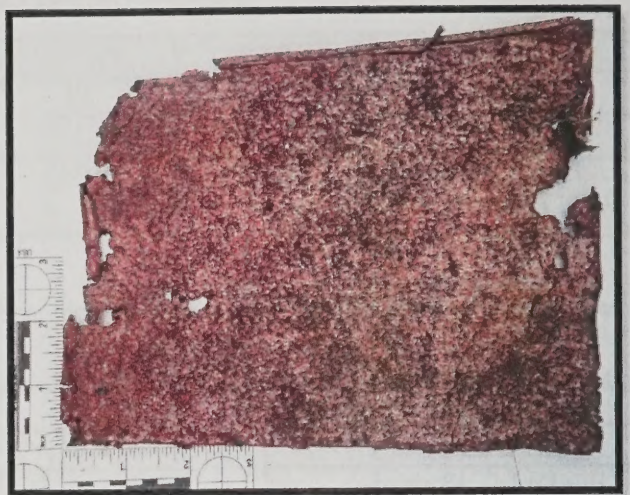
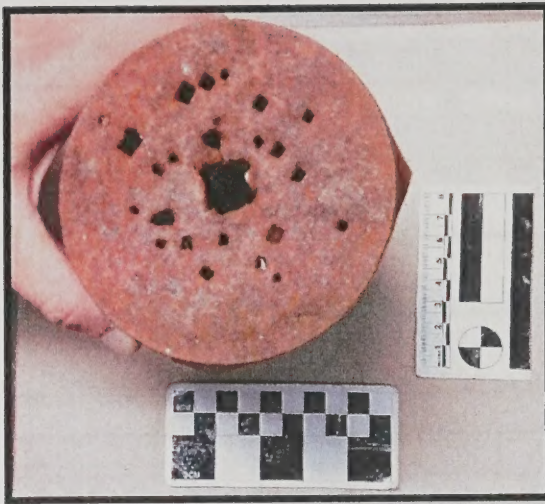


FIGURE 34: RE-USED CANISTER AND SHEET METAL PIECE

### Specialized Tools beyond Mining

Large sewing needles imply work in heavy fabric, like canvas or thin, soft leather (Figure 35). Tents may have been repaired here. Smaller needles suggest tasks such as clothing repair, bag mending or closing, or canvas roofing work. Metal snips are implied by the cut tin. Blacksmithing could be present based on the various modified pieces of heavier metal, but evidence for such is not apparent based on recovered tools, clinkers, and the like. There is also use of coffee grinders, a wedge, and a drawing knife. No doubt wood gathering for fires was important, but no saw/saw parts or axe heads are in the sample. The wedge could have been used in wood splitting.

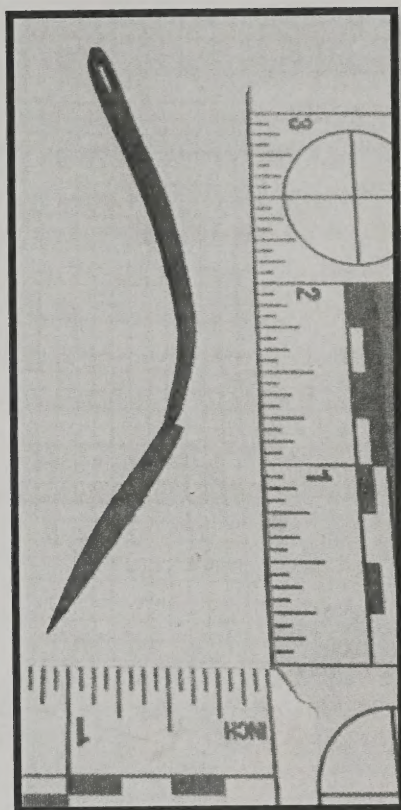


FIGURE 35: FERROUS NEEDLE

### Native American Indian Artifacts

While Native American tribal presence is identifiable by a light scattering of obsidian artifacts, more concentrated use is discussed in a later section herein dealing with the sister site, Common Cut Rockshelter. Within the flat several small bifacial thinning flakes and a broken obsidian projectile point were found. One flake was sourced through means of Energy Dispersive X-ray Fluorescence analysis by Dr. Richard E. Hughes of the Geochemical Research Laboratory in Portola Valley, California. It was found to be from the Railroad Grade geochemical source in the Medicine Lake Highlands of Siskiyou County (Geochemical Research Laboratory Letter Report 2018-60, Appendix 3).

### Miscellaneous and Unknown

The lost and discarded remains are numerous, many being unusable scraps from metal working, straps that held material, wire that was cut from wrapping or stringing materials, or cast-iron pieces from broken containers or stoves. Larger metal items may have even been salvaged from the site during World War II iron drives. This could account in part for the absence of heavy machinery parts, for instance. But there was little found in terms of larger bolts or nuts that likely would have been left behind. Possible broken small machinery parts may explain some of the unidentifiable artifacts.

Water was not secured, apparently, by piping as no such remnants were found. Identifiable wagon parts were not present, and only one possible chain segment was located. A small possibly lead box is an enigma, its contents uncertain (Figure 36). As found it was smashed flat. A possible brass instrument cap (Figure 24) implies high-quality instruments, maybe from early government surveyors in the area. The lead seal and tobacco tab (Figure 37) demonstrate the preservation of metallic items as opposed to fabric or other perishable materials that may have formed some of the original trash. But re-use of canvas, cloth or leather bags, and transport elsewhere seem likely. Also found was a fine cross-hatched embossed strap with nail hole, possibly from a fancy box (Figure 38), a cuprous strip that may have formed the edge of a bag or heavy cloth or other material (Figure 39), and a cuprous and ferrous cylindrical item such as from a battery or electrical object (Figure 40).



FIGURE 36: UNIDENTIFIED LEAD (?) BOX, POSSIBLY PAINTED WHITE OR OXIDIZED

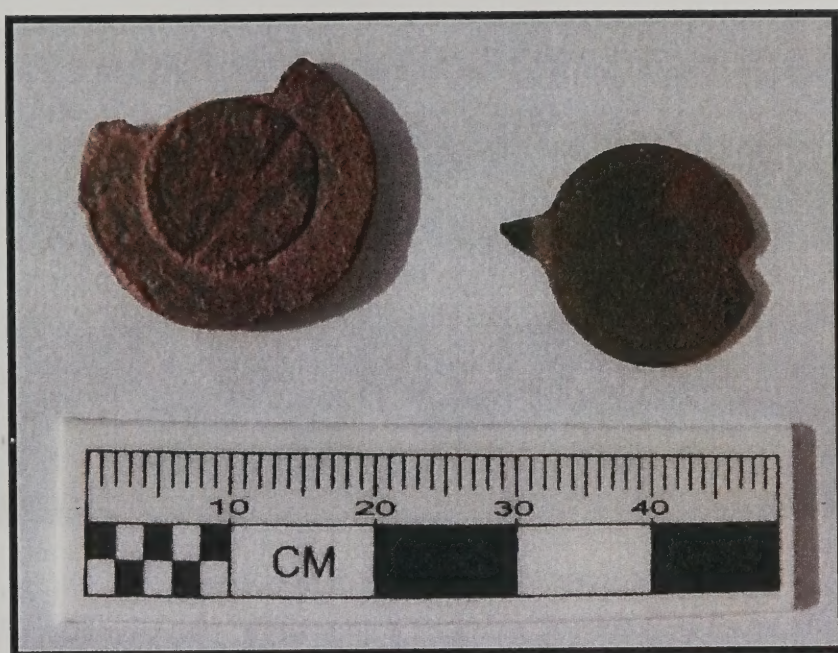


FIGURE 37: LEAD SEAL PART AND TOBACCO TAG



FIGURE 38: CUPROUS DECORATED BAND WITH NAIL HOLE



FIGURE 39: CUPROUS FOLDED BAND



FIGURE 40: UNKNOWN FERROUS AND CUPROUS ITEM, POSSIBLY ELECTRICAL

## Discussion—Rancheria Gulch Hamlet

History once lost is history now at least partially gained from this heritage-related study of a small California Siskiyou County gold mining hamlet from the latter half of the 19<sup>th</sup> century. The residential complex sits between two heavily mined secondary drainages to the Klamath River within a larger (Cottonwood) mining district that no longer has the public eye. Frugal miners, including at least some Chinese-American mineworkers, likely came and went in this gulch area. Significant local mining even occurred after the main residency in this gulch. Historic human lifeways can be cautiously surmised based on this limited sampling and archival study. Some interpretations have already been offered above. Discussion of findings from the nearby and possibly related Common Cut Rockshelter are presented in the next section.

The hamlet benefitted from a large, relatively flat, open field in close proximity to mining locations, adjoining a stage/transport road, and near the very early Gold Rush Cottonwood Mining District's main commercial and residential center of Henley. The main period of use seems to have occurred from the early 1850s to the 1870s. However, this does not necessarily imply that this was the period when there was the most gold production as evident in the recovery from the later hydraulic and drift mine workings.

The surface features and archaeological remains suggest there were at least a half dozen structures here, probably more, possibly including tents or tent houses. There is likely some clustering of structures toward the south half of the field, but it seems likely that spacing of domiciles was overall rather haphazard in this rough-and-tumble ramshackle village. Decision-making on locations of dwellings may have been a communal undertaking to avoid conflicts. When exactly each structure was used and how many were simultaneously utilized is not known, but one can envision a local hamlet or social unit or units here of perhaps up to 15-25 folks.

Chinese-American remains were limited to several likely structure pads, absent at others indicating some spatial differentiation of use in the flat much as discussed (at a much lower scale) by the local informant who visited the project. A few cabin remnants can also be found on at least one adjoining ridge to the north (see discussion in next section), so not all domestic-related activities were on the open flat. In the early years of the Gold Rush, Borthwick (1857 in Engenhoff 1949:67) commented that "In out-of-the-way places one met with cabins fallen into disrepair, which the prospectors had abandoned to locate themselves elsewhere, and even villages of thirty or forty shanties were to be seen deserted and desolate, where the diggings had not proved so productive as the original founders had anticipated." One can anticipate that here at Rancheria Gulch there were shanties as well, likely dismantled or salvaged by the occupants or by others who followed depending on yields and other matters like water availability and better assumed prospects.

In a discussion of an archaeological model of Victorianism on the Nevada mining frontier, Hardesty and Hattori (1983:63) note that several settlements appeared to show a strong Victorian cultural expression of planned linear neighborhoods as opposed to "the unplanned traditional communities of the immigrant Chinese and other non-Anglo ethnic groups in the 1870's and 1880's." While we have evidence of some Chinese-American use in this Rancheria Gulch hamlet,

the geography, mining claims, low population density, probable length of residence, and other factors likely also came into consideration, and a linear arrangement apparently was not a consideration, Victorian ideals aside for what probably was mainly an Anglo occupation. This seems to follow Hardesty and Hattori's (1983:63) idiosyncrasies of individual households as the occupation model applicable here.

Ham (1996:81-82), based on an 1851 diary entry by gold miner William Dennison Bickham regarding a Sierra Nevada mining town, provides a discussion of the buildings. Aside from the fancier "good frame houses", there was:

"the rougher frames with floors of rough unplanned boards laid loosely on sills; then the frames with no floors save the hard ground. Next are the houses composed of pine clapboards nailed to posts set into the earth; then are the rough or hewn log cabins, some without floors, ...finally are the tents or cabins of the miners. The best houses are generally lined and sealed with calico or canvas, and generally are covered with clapboards, though some are roofed with canvas which is equally water proof."

Lacking any photographs or drawings, living structures at this hamlet likely included frame cabins with doors and windows, perhaps with clapboard siding and shingle or canvas roofs. Some almost certainly had footing stones for posts and perhaps sill plates. Logs for a cabin were some distance away and were not likely to be the main component of the structures here. The implication is that boards were purchased from a nearby source, perhaps Henley or a higher elevation sawmill.

Vaughan (1986:10-11) relates an 1887 discussion in a nearby Shasta County newspaper that may have relevance to this locality. One can compare "antiques", or old settlers residing for longer episodes in the mining community as opposed to the "pilgrims" or nomads who hopped from camp to camp as new discoveries were brought to light or water for mining was seasonally available. In the case of the Shasta County mining camp studied by Vaughan, rock chimneys and extensive workings and trash deposits implied longer residency than evident in Rancheria Gulch. No chimney foundations were found in the Rancheria Gulch field area, but several occur on the nearby ridge. Rock chimney foundations in this gulch area may have been substituted by cast-iron heating and cooking appliances (as discovered at the site), cooking wares that could be transported by mule. Certainly, there is a relative abundance of lost and discarded cooking and heating-related items in Rancheria Gulch, much more beneath the surface and likely disposed of in the nearby drainages.

This hamlet was the scene of generally untidy miners by today's standards or even by Victorian-era urban measures. Residents and visitors were living and working near their living quarters or near a nearby abandoned location with some of their trash and losses trampled, displaced, and broken over the years. Some trash may have been dumped in the nearby gulley, as stated above, or in privies that were not found in this project's investigations. The general deposit does not seem very deep, perhaps 20-30 cm or less, and represents to some extent a palimpsest of remains. It also appears that structures were salvaged and many personal remains probably removed when the tenants finally left this camp. It can only be conjectured that some of the dwellings were occupied by different miners over a period of years.

The residents overall were not well-to-do judging by their trash and losses. There is no fancy glass, ceramics, or lost coins; and only one "fancy" button, gilded coin purse, and locket of ordinary cuprous metal. There is considerable re-use and re-purpose of items. The structures were elementary cabins and likely, tents or framed and floored tents, and there was some concern for safeguarding of at least one structure by a door lock.

The apparent relative absence of luxury or status items may be accounted for by income but also by the relative remoteness of the location and the lack of necessity of trying to impress your colleagues or partners. And almost certainly many such items would have left with the owners when they moved, unless broken or lost.

There do not seem to be expressions of conspicuous consumption at this hamlet as one might expect in the coeval Victorian-like community of Yreka. There are no trash dumps at the Rancheria Gulch hamlet, and there is clear evidence of considerable re-use of mass-produced commodities (see Hardesty and Hattori 1983:61). Furthermore, Swope (1993:243) in a remote mining camp in southern California found that "Small, isolated domiciles and mine workings...which would have been occupied by individuals or small partnerships, are characterized by very small artifact assemblages." What is not clear in Rancheria Gulch is how much trash was transported short distances for dumping in seasonal drainages or just a bit further away into the Klamath River. There is also the consideration of war time recycling of metal items lessening the surface artifact assemblage (see Ackerly 2020).

Rancheria Gulch was at the tail-end of an extensive world-wide commercial network. There does not appear to be much subsistence independence, but flora and fauna remains were not a focus of recovery and their packaging, if any, was not likely to preserve. Canned goods were unquestionably used from a store as present in Henley. Delgado (2009:167) discusses Hardesty's (1988) view of the mining frontier as a component of a well-established world economic system. In this regard, Delgado (2009:167) proposes that San Francisco as a maritime center "offered a mode of efficient transport for all the commodities required to build urban centers; feed, clothe, and equip the miners, and transport gold to the national and international economy." The Cottonwood Mining District was a relatively remote down-the-line component of this world system with goods entering San Francisco, then transported to Sacramento-Marysville, on up the Sacramento Valley by paddle-wheeler or other means to Red Bluff(s), then by pack train and wagon to Shasta, Yreka and on to Henley until the railroad came through in the 1880s (see Wells 1881:161-162).

Some materials from San Francisco came via Trinidad and Crescent City to parts of Siskiyou County and to Jacksonville, Oregon, then as well over the formidable Siskiyou Pass to Henley (Wells 1881:161-162; Tveskov et al. 2001). The material goods discussed at Rancheria Gulch are largely the result of well-developed international commerce. Here we can include eastern U.S. goods, ceramics from England and China, opium from China, and probably secondarily goods from local merchants and suppliers. Local agriculture, lumber interests, and animal husbandry benefits were developed in the County early on. Wells (1881:162) noted that "Flour, potatoes, etc. were packed from Oregon, until they were produced here (Siskiyou County) in sufficient quantities."

Overall, this archaeological exercise demonstrates that there is a relatively rich array of largely unseen material remains at Rancheria Gulch, an obscure, small, expedient mining settlement. The evidence is only a small fragment of the vestiges of the seemingly prudent, ethnically diverse people living and working here, transitory individuals with largely little-known lives of high hopes, hard work, and occasional indulgences. There were likely some economic successes here, at least enough to maintain a hard-working livelihood for a few years before moving on to other places. The findings and interpretations can be added to other studies regarding the lives and times of California Gold Rush and post-Gold Rush mining camps and settlements and their inhabitants and supporters fleshing out the similarities and variations in the inferred human behaviors and evidence examined.

In the section that follows, discussion of heritage-related findings from a utilized rockshelter and cabin location at the lower end of Rancheria Gulch adds another chapter to the local lifeways constructed here, including those of some presumed Shasta tribal individuals at the point just before and at the time of contact with the European colonists.

## Part 2 Common Cut Rockshelter

While assessing heritage resources in the vicinity of Hornbrook, California in 2016, the authors first visited what is now called the Rancheria Gulch Hamlet, discussed in detail above. The junior author at that time spotted a prominent sandstone outcrop jutting out above Interstate 5 further down the slope and decided to hop down the hill and investigate that sandstone (Hornbrook Formation) rocky prominence (Figure 41). During this scrutiny he discovered a small rockshelter in which he found an iron projectile point described below. A few other historic artifacts were noted as well. This small shelter may have had recent unauthorized collecting in the past and was clearly near a location of looting in the adjoining site. The interior sediments of the shelter seemed shallow. Whether there were any subsurface materials that might suggest a European-Native American Indian Contact Period site was an intriguing question since so little is known about this period in northern California. This location appeared worthy of initial, preliminary, limited testing. What features and complexity might this site hold, if any? Immediately adjoining the shelter on the ridge was the remnant of a stone chimney base and likely cabin pad. During the 2018 Passport-in-Time project sponsored by the Bureau of Land Management, restricted, exploratory testing of the shelter was conducted including use of metal detector survey around the shelter and cabin remnant.

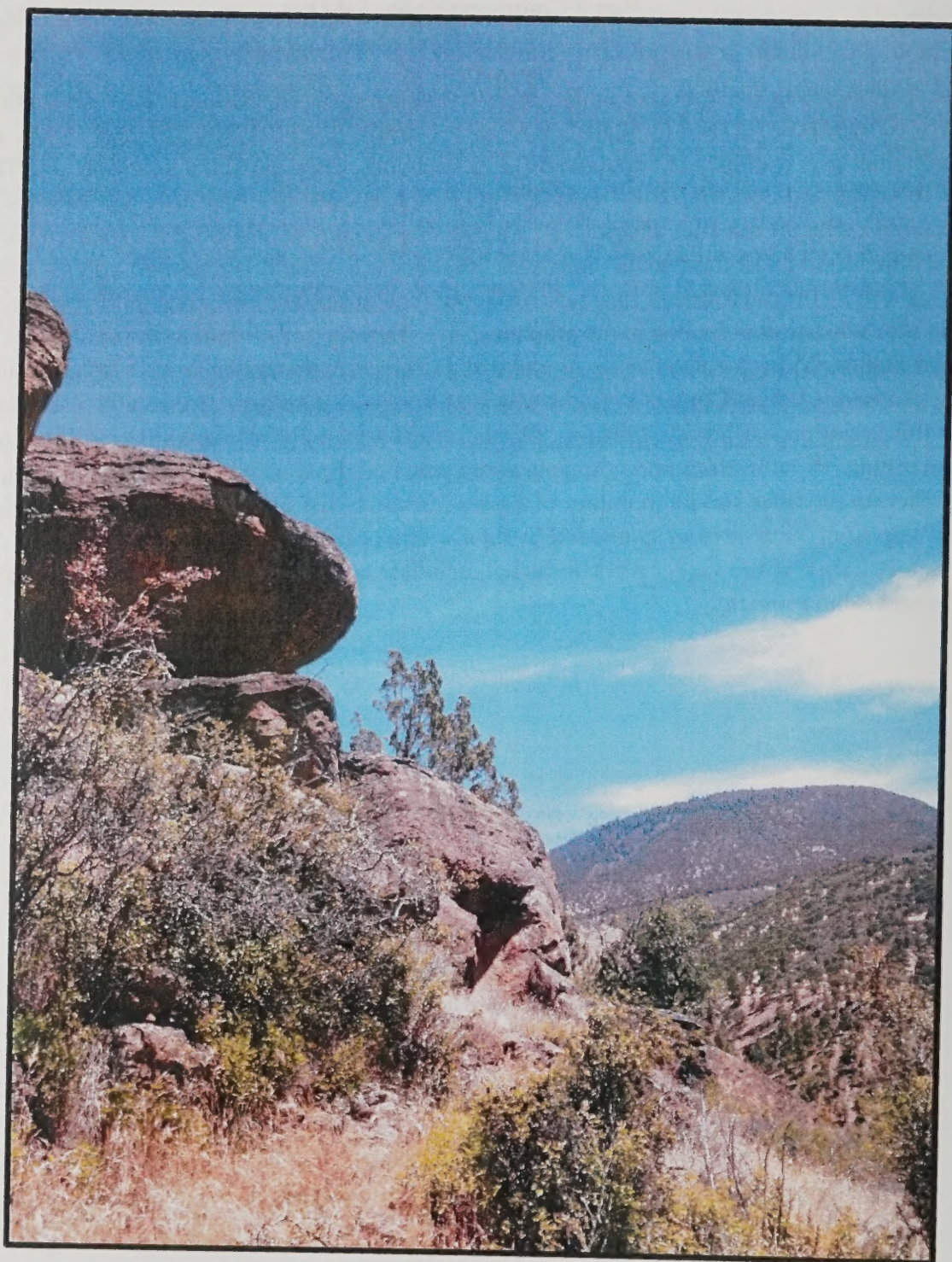


FIGURE 41: COMMON CUT ROCKSHELTER OUTCROP

#### Site Description

The small site consists of a south-facing rockshelter with an adjoining even smaller shelter or overhang and an apron or talus slope below including surface and slightly buried cultural material

(Figure 42). There is a collapsed rock chimney foundation, cabin pad, and scattered historic trash on the ridge top adjoining the outcrop (Figure 43). This site was recorded as BLM site number CA-030-2147 with a Smithsonian number forthcoming. The main shelter is fronted by a rock wall composed of three courses of roughly stacked, unmodified flat sandstone blocks with the wall approximately 3 m in length, 1.55 m in width, standing 0.95 m high (Figure 42). This wall forms a low wind break and may have served as a defensive feature, possibly to conceal a hunter and/or to deter larger animals from entering. The main shelter has a shallow, loose, brownish-yellow colored sandy deposit a few centimeters thick. The preponderance of the deposit is likely from deteriorating sandstone. There does not appear to be any soil/sediment development from cultural activities of note. The shelter is 4.5 m wide at its maximum extent, 3.0 m deep from the drip line back to its rear wall, and 2.1 m high at its uppermost point. The floor is essentially flat. Rodents have enjoyed the sheltering effect of this location as evident in the abundant feces in the soil matrix and on exposed rock surfaces.



FIGURE 42: VIEW OF SHELTER, WALL IN FRONT, AND UNIT 3 BELOW



FIGURE 43: CHIMNEY FOUNDATION REMAINS BY COMMON CUT ROCKSHELTER

# COMMON CUT ROCKSHELTER

## PLAN VIEW

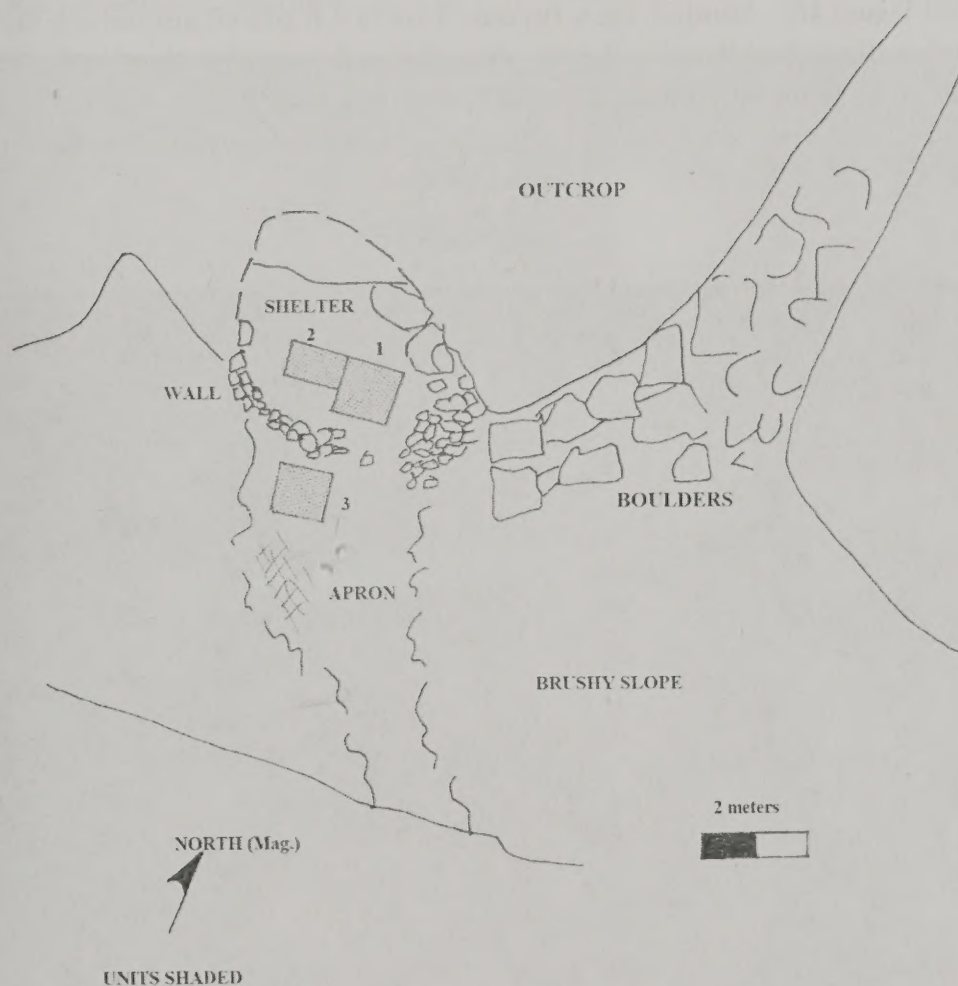


FIGURE 44: PLAN VIEW MAP OF SHELTER AND UNIT LAYOUT

## Recovery Strategy

Initially, the shelter area was mapped with transit, compass, and tape measure (Figure 14). This included all associated excavation units (Figure 45-Figure 48). A 1m x 1m unit (Unit 1) was purposively placed near the shelter center where there appeared to be the most sediment present (Figure 45 and Figure 46). Another 1m x 1m unit (Unit 3) was placed just outside the middle of the shelter below the rock wall and at the top of the thin soil apron fronting the shelter looking for cultural remains within the soil (Figure 42 and Figure 47). A 1m x 0.5m unit (Unit 2) was opened adjoining Unit 1 (Figure 48) to the west as recovery suggested there might be cultural remains in this location.



FIGURE 45: UNIT 1 LAYOUT PRIOR TO EXCAVATION

Standard 10 cm levels using the ground contour were used. Screening was accomplished by 1/8" screens with back dirt examined periodically with 1/16" screens. Material was excavated with trowels and sediment placed into buckets and transferred to the screens situated over tarps for later backfilling. Recovered cultural remains were placed into level bags or plastic vials for later analysis. Level notes and photographs were completed for each level, and a sandwich bag of sediment from Unit 1 was saved for later analysis. Metal detectorists swept the apron below the shelter and the area around the presumed cabin ruins.



FIGURE 46: UNIT 1, AS COMPLETED



FIGURE 47: UNIT 3, AS COMPLETED



FIGURE 48: UNIT 2 AT BEDROCK

TABLE 9. COMMON CUT ROCKSHELTER (CA-030-2147) CATALOG WITH NOTES

CATALOG NUMBER	LOCATION	DEPTH	ITEM	MEASUREMENTS	COMMENTS
1	Unit 1	10-20 cm	17 obsidian pressure flakes	0.4-0.8 cm ln.	
2	Unit 1	"	Utilized obsidian late core reduction flake	2.7x2.45x0.71 cm, 2.8 g	Unifacial
3	Unit 1	"	Obsidian biface thinning flake	1.5 cm ln.	
4	Unit 1	"	6 undetermined obsidian flakes	0.34-1.0 cm ln.	
5	Unit 1	"	Cryptocrystalline silicate interior flake	< 1.0 cm	White chalcedony
6	Unit 1	"	2 small gastropod fragments		Natural?
7	Unit 1	"	Small brown glazed stoneware sherd	< 1/2"	
8	Unit 1	"	Black opaque glass trade bead-simple	0.3 cm ln. x 0.26 cm dia.	Barrel-shaped
9	Unit 1	"	4 1d common cut nails		2 broken, 1 bent
10	Unit 1	"	Small split bone fragments		1 bird
11	Unit 1	"	Fragment of petrified wood	2.21 x 0.6 x 0.62 cm	Roughly cylindrical
12	Unit 1	"	Broken common cut nail	12d	
13	Unit 1	"	Hungarian hob nail	#8	
14	Unit 1	"	White glazed earthenware sherd	1/4" thick	Bowl?
15	Unit 1	"	Blue glass soda bottle (?) broken finish	2.61 x 2.12 x 0.7 cm, 7.0 grams	Unifacial utilized edge?
16	Unit 1	0-10 cm	3 bone fragments	Less than 3.17 cm ln.	Long bones, 1 calcined
17	Unit 1	"	Long bone fragment (deer?)	3.73 cm ln.	Submitted for C-
18	Unit 1	"	Charcoal fragments	5	
19	Unit 1	"	Obsidian late core reduction flake	1.37 cm ln.	
20	Unit 1	"	2 olive-colored glass bottle shards		
21	Unit 1	"	Cuprous pistol cap, reeded side	3/16" ht. and dia.	GI embossed on head
22	Unit 1	"	4 obsidian biface thinning flakes	0.95-1.23 cm ln.	
23	Unit 1	"	Obsidian biface thinning flake	1.07 cm ln.	
24	Unit 1	"	Obsidian late core reduction flake	0.99 cm ln.	No cortex
25	Unit 1	"	5 obsidian indeterminate flakes	0.51-0.93 cm ln.	
26	"	"	13 obsidian pressure flakes	0.4-1.1 cm	
27	Unit 1	"	2 obsidian bipolar cores	<2 cm and 1.15 x 0.76 x 0.48 cm	
28	Unit 1	"	Cuprous hook and eye clasp	1/2" ln.	
29	Unit 1	"	Common cut nail part (12d?)		
30	Unit 1	"	Common cut nail 6d		Half present
31	Unit 1	"	Lead sheeting fragment	1 1/8" ln., 0.008 mm thick	
32	Unit 1	"	Cuprous two-pronged, oval tab (tobacco?)	3/16" ln.	Tabs bent 90 degrees
33	Unit 1	"	Possible ferrous common cut nail shank with possible hammering on breakage point	3/4" ln.	Shim or re-used
34	Unit 1	"	White porcelain Prosser 4-hole button	15/32" dia.	Pie crust design
35	Unit 1	"	Cuprous slightly bent 4-sided tapering "tooth"	5/8" ln.	Comb tooth?
36	Unit 1	"	Highly opalized glass fragment		
37	Unit 1	"	Animal tooth fragment		Herbivore—deer s

38	Unit 1	"	White glazed earthenware sherd	Very small	
39			No entry		
40	Unit 2	10-20 cm	Two obsidian biface thinning flakes	1.12-1.32 cm ln.	
41	Unit 2	"	Obsidian utilized flake from late core reduction	2.1 x 1.53 x 0.33 cm, 1.0 grams	
42	Unit 2	"	13 obsidian indeterminate flakes	0.39-1.34 cm	
43	Unit 2	"	9 obsidian pressure flakes	0.42-1.67 cm	
44	Unit 2	"	6 faunal fragments including bird long bone splinter and rodent bones		Rodent knawing evident
45	Unit 2	"	Herbivore animal tooth		Deer size
46	Unit 2	"	Cryptocrystalline silicate pressure flake	0.46 cm ln.	White chalcedony?
47	Unit 2	20-40 cm	2 obsidian bifacial thinning flakes	0.5-0.97 cm ln.	
48	Unit 2	"	4 obsidian indeterminate flakes		
49	Unit 2	"	4 obsidian pressure flakes	0.39-0.6 cm	
50	Unit 2	0-10 cm	7 obsidian pressure flakes and 7 obsidian indeterminate flakes	0.45-0.92 cm	
51	Unit 2	"	13 indeterminate obsidian flakes, 3 obsidian pressure flakes, 1 very small amber glass shard	Indeterminate: 0.58-1.58 cm; pressure: 0.54-0.67 cm	
52	Unit 2	"	10 faunal fragments		Long bone breakage—deer(?) and medium mammal
53	Unit 2	0-10 cm	Common cut nail shank		
54	Unit 2	"	River cobble fire cracked fragment		
55	Unit 2	"	5 obsidian biface thinning flakes	0.7-1.03 cm ln.	
56	Unit 2	"	Split translucent cobalt blue glass trade bead	0.78 cm dia. x 0.59 cm th. x 0.26 cm dia. orifice opening	Wound, oblate spheroid
57	Unit 2	"	Dark brown glazed porcelaneous possible button or bead fragment	0.32 cm th. and > 0.7 cm dia.	> 0.26 cm hole (?) dia.
58	Unit 2	"	Thin lead sheeting fragment	½" ln.	Part of larger sheet
59			No entry		
60			Duplicate entry to #57		
61	Unit 2	0-10 cm	Small green bottle glass shard		
62	Unit 2	"	Cryptocrystalline silicate pressure flake	0.67 cm	Chalcedony?
63	Shelter apron	Surface	Late core obsidian flake	1.03 cm ln.	Unifacial edge use?
64	Adjoining shelter	Surface	Obsidian Desert Side-notched projectile point	2.13 x 1.66 x 0.42 cm, 0.6 grams	General sub-type
65	Chimney locus	Surface	Small obsidian corner-notched projectile point	2.2 x 1.33 x 0.32 cm, 0.7 grams	Desert Side-notched or Klikapudi?
66	Shelter apron	Surface	Cuprous 4-hole button with embossed rilling and cross-hatched circular bands	11/16" dia.	
67	Shelter apron	Surface	Large herbivore tooth		

68	Shelter apron	Surface	Leaded glass fluted tumbler piece	4.15 x 3.48 x 0.83 cm, 13.7 grams	Worn and flaked broken edges; use striations on body?
69	Shelter vicinity	Near-surface	3 blue globular top bottle pieces		Burnt?
70	Shelter vicinity	Near-surface	2 bone fragments		
71	Shelter vicinity	Near-surface	9 olive green bottle shards		
72	Shelter vicinity	Near-surface	3 window glass shards	0.17 cm th.	From cabin?
73	Shelter	Surface	Folded lead sheeting, 3 folds	5.9 x 3.62 x 0.86 cm, 0.18 cm th.	For bullet molding
74	Shelter	Surface	Ferrous suspender clasp, two-pronged	1" wd. x 7/8" wide	
75	Shelter	Surface	Lead powder can top, folded	ca. 3/4" dia., 3/8" th.	Threaded interior for cap
76	Shelter	Surface	Circular lead seal?	1/2" dia. X 1/16" th.	
77	Shelter	Surface	3 6d common cut fencing nails (2 bent, 1 broken); 4d common cut nail and 1 common cut nail shank		
78	Unit 1	10-20 cm	Opalized clear glass splinter	<2 cm ln.	
79	Unit 1	"	Cerulean blue simple globular trade bead	0.4 cm dia. x 0.28 cm ln.	White patina
80	Unit 2, east 1/3	10-20 cm	Colorless glass fragment or cryptocrystalline flake	0.3 cm ln.	Chalcedony?
81	Unit 3	0-10 cm	Hungarian hob nail #10		
82	Unit 3	"	Common cut nail, broken and bent (10d)		
83	Unit 3	"	3 olive green bottle shards		
84	Unit 3	"	Bone fragment		
85	Unit 3	"	2 small mottled brown glazed stoneware sherds		
86	Unit 3	"	Cuprous pistol cap fragment, reeded		
87	Unit 3	"	4 obsidian pressure and 3 obsidian indeterminate flakes	0.65-0.76 cm ln.	All likely late trimming
88	Units 1-2	Wall debris 20-25 cm	Ruby simple donut glass trade bead	0.27 cm dia. x 0.14 cm ln.	Whitish patina or coating
89	"	"	3 small bone fragments		
90	"	"	2 obsidian pressure flakes	0.71-0.77 cm ln.	
91	Shelter	surface	Ferrous sheet metal barbed projectile point	1.23 x 1.43 x 0.45 cm, 1.5 grams	Front of shelter
92	Shelter	surface	Small molded brown glazed stoneware sherd		
93	Site vicinity	surface	Obsidian Tuluwat projectile point	1.77 x 1.45 x 0.45 cm; 0.9 grams	Very opaque black obsidian
94	Site vicinity		Obsidian Desert Side-notched projectile point	1.61 x 1.12 x 0.43 cm; 0.8 grams	Tang broken
95	Unit 1	0-10 cm	Obsidian bipolar flake	1.6 cm ln.	XRF-27-2A
96	Unit 1	"	Obsidian lamellar biface thinning flake	1.82 cm ln.	XRF-19-1
97	Unit 1	10-20 cm	Obsidian pressure flake	0.86 cm ln.	XRF-17B

98	Unit 1	"	Obsidian biface thinning flake	1.27 cm ln.	XRF-5
99	Unit 1	0-10 cm	Obsidian late core reduction flake	1.0 cm ln.	XRF-17B
100	Unit 1	10-20 cm	Obsidian indeterminate flake	1.17 cm ln.	XRF-4A
101	Unit 1	"	Obsidian biface thinning flake	1.45 cm ln.	XRF-3
102	Unit 1	10-20 cm	Obsidian bipolar core nucleus	1.13 cm ln.	XRF-27-2B
103	Unit 2	0-10 cm	Obsidian indeterminate flake	1.74 cm ln.	XRF-51A
104	Unit 2	"	Obsidian indeterminate flake	1.23 cm ln.	XRF-51C
105	Unit 2	"	Obsidian pressure flake	0.77 cm ln.	XRF-26B
106	Unit 1	10-20 cm	Obsidian bipolar core flake with cortex	1.44 cm ln.	XRF-6B
107	Unit 1	"	Obsidian indeterminate flake	0.85 cm ln.	XRF-4B
108	Unit 2	0-10 cm	Obsidian biface thinning flake	1.16 cm ln.	XRF-51D
109	Unit 2	"	Obsidian late core reduction flake	1.5 cm ln.	XRF-51B
110	Unit 2	"	Obsidian biface thinning flake	0.98 cm ln.	XRF-51E
111	Unit 1	10-20 cm	Obsidian late core reduction flake	2.64 cm ln.	XRF-2
112	Unit 1	0-10 cm	Obsidian pressure flake	0.97 cm ln.	XRF-26A
113	Unit 1	"	Obsidian core reduction flake	1.31 cm ln.	XRF-17A
114	Unit 2	10-20 cm	Obsidian late core reduction edge modified flake	2.13 x 1.66 x 0.34 cm, 0.8grams	XRF-41, unifacial, steep straight edge utilized

## Unit Discussion

Unit 1 within the shelter at the 0-10 cm level contained a loose fine sandy to sandy loam deposit with abundant rodent feces and little other organic residue except flecks of charcoal. The soil was a brownish yellow (10YR 6/6-dry) color with gravels and pebbles present as weathered from the sandstone. Bedrock was becoming exposed at the base of the level. The 10-20 cm level was much the same but with areas of soil compaction and bedrock exposed throughout much of the unit except for about one-third of its south end. Below 20 cm only a few pockets of sediment continued for about three centimeters in this southern unit extent (Figure 46).

Unit 2 sediment was much the same as that for Unit 1 with less animal residue. Bedrock was hit almost immediately in most of the unit (Figure 48). A small ash and charcoal concentration was encountered in the southeast end of the unit described further below. A small crack in the bedrock continued yielding sediment to 40 cm producing a few obsidian pressure flakes and a piece of charcoal.

Unit 3 situated outside the shelter mouth on the sloping apron was similar in soil color to that inside with more compaction (slightly hard) and organic residue. The natural soil is gravelly and loamy in texture and bedrock was hit almost immediately. Charcoal flecks and small pockets of ash were reported.

## Debitage/Cores

There were 148 pieces ofdebitage found at the shelter, all but three obsidian. Sixty of the obsidian flakes occurred within Unit 1, 74 obsidian flakes within Unit 2 (both units inside the

shelter), with two obsidian flakes from wall slough between these interior units. Unit 3 on the exterior slope yielded only seven obsidian flakes. Three small cryptocrystalline silicate (chalcedony?) flakes came from the interior units (see Table 9 for measurements and unit-level recovery).

All flakes are small, and if a mesh screen finer than 1/8" was used even smaller flakes would likely be recovered. Fifty-five of the obsidian debitage pieces represent broken flakes not identifiable as to technique, but they likely are mostly pressure and biface thinning flakes lacking cortex. Sixty-two flakes are pressure, 20 are later stage biface thinning flakes, six are late core reduction flakes, and two are bipolar flakes. Three small obsidian bipolar core remnants were found in the interior units. Obsidian utilized flakes and projectile points are discussed below.

The debitage is not dense indicating an occasional practice of trimming late-stage bifaces and manufacturing or re-sharpening projectile points. Some flakes were brought into the shelter (or removed from larger pieces) for use in light cutting-scraping duties. It is possible as discussed later herein that a few glass shards were also similarly used. These debitage remains are also suggestive of ephemeral or very sporadic, limited use of the shelter, presumably by Shasta peoples. Twenty-two samples were analyzed by Dr. Richard Hughes of the Geochemical Research Laboratory in Portola Valley, California (Appendix 3). All but one sample are from the Grasshopper Flat/Lost Iron Well variety from the Medicine Lake Highlands some 70 km (45 miles) distant as the crow flies. This is well within the Shasta traditional territory as described by Dixon (1907) and Holt (1946). It is unknown if it was directly acquired by the occupants or obtained through trade/exchange or other means. One flake is from a more distant source in Oregon, the Drews Creek/Butcher Flat source some 161 km (100 miles) easterly. This is well outside Shasta traditional territory.

The samples analyzed by Dr. Hughes from the Common Cut Rockshelter attributed to the Grasshopper Flat/Lost Iron Well source include several utilized flakes; and bipolar, pressure, biface thinning, late core reduction, and unidentified reduction flakes as well as two of the side-notched projectile points. This indicates that late-stage bifaces and small cores were brought to this shelter from outside locations, and that at least one larger flaked stone artifact came from Oregon. The points may have been manufactured from flakes or bifaces locally or imported from elsewhere.

### **Modified Obsidian Flakes**

Three of the larger late core obsidian flakes, between 2.1 and 2.7 cm long (No's 2, 41 and 114 in Table 9), exhibit unifacial edge damage and flaking, presumably from use in scraping and cutting activities (Figure 49).

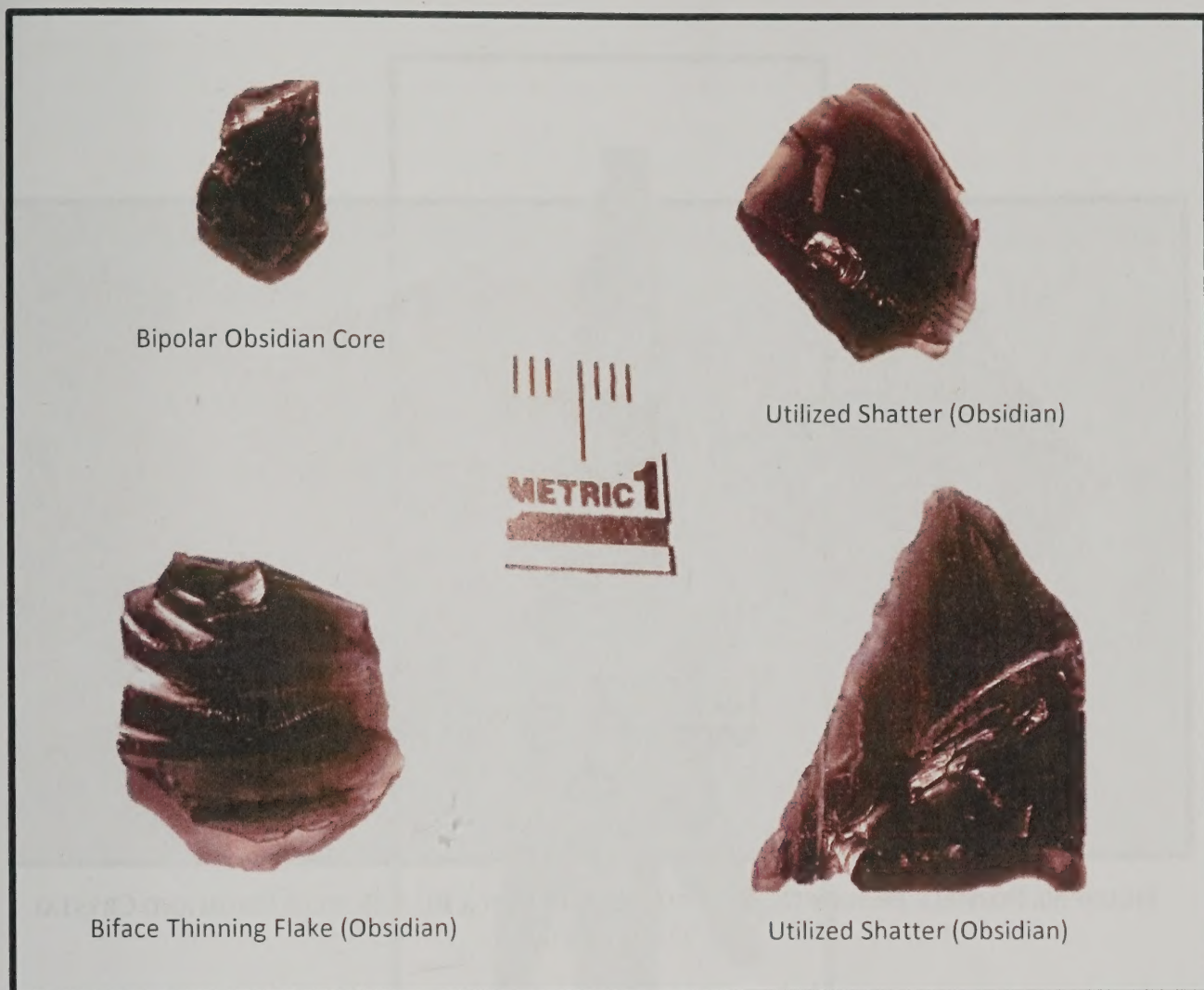


FIGURE 49: UPPER LEFT IS A BIPOLAR CORE; REMAINING PICTURES ARE UTILIZED FLAKES, ALL OBSIDIAN

### Possible Edge-modified Glass Pieces

Several pieces of glass have suspicious edge modification that could represent Native American secondary use of scavenged pieces (Figure 50). One (No. 68 in Table 9) is a portion of an uncolored (leaded?) glass fluted tumbler piece with a worn and flaked broken edge and multiple body striations. This was recovered from the shelter apron surface. The second piece (No. 15 in Table 9) is a blue bulbous bottle finish piece with a broken edge possibly utilized resulting in unifacial flaking. This item was found in Unit 1, 10-20 cm level. Three possibly related shards from this bottle (No. 69) were attained in the shelter vicinity.

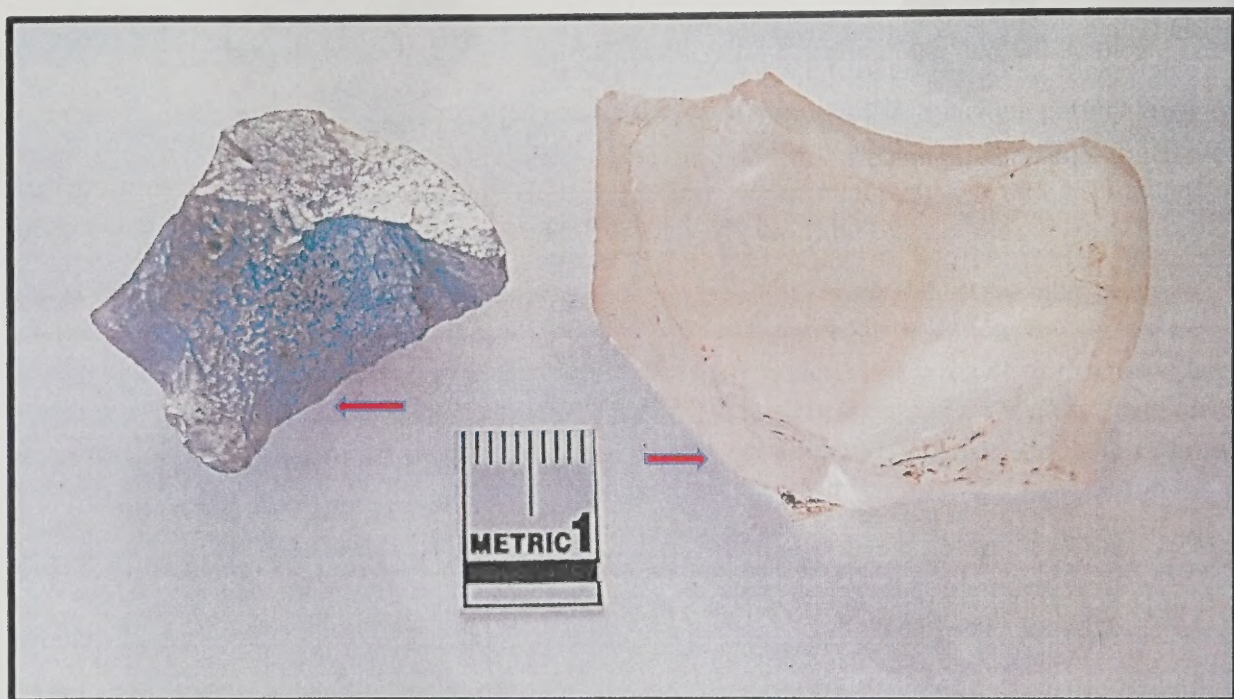


FIGURE 50. POSSIBLE BROKEN GLASS UTILIZED EDGES ON A BLUE BOTTLE FINISH AND CRYSTAL TUMBLER PIECES

### Projectile Points

Rarely do archaeologists in California find contact-era projectile points. The discovery of a ferrous sheet projectile point on the surface of the shelter mouth was a key indicator of a possible protohistoric location of Shasta activities. This point (Figure 51) (No. 91) is barbed measuring 1.23 x 1.43 x 0.45 cm and weighing only 1.5 grams. This point was undoubtedly made for hafting to an arrow shaft.



FIGURE 51: FERROUS SHEET METAL ARROWHEAD

Faint imprints of a cloth are found on one face of the rusting iron projectile point (Figure 50). The pattern appears to be plain weave, about 100 count such as might be found on a flour sack or similar item. The original cloth has no doubt shrunk in at least thickness and the count could have originally been less. In any case, the fabric appears to have been thin. As such, this item might have been originally cached or stored in a bag or the like or laid on a piece of cloth. Interestingly, Vaughan (2001:28) reports on a similar cloth imprint on a single-bladed axe head found with a

presumed Wintu burial at CA-SHA-2830 in Redding dating to the 1850s. She suggests the item was wrapped in fabric before being placed in the ground accompanying a burial. (There is no evidence of direct burial accompaniments at the study site.) The opposite arrowpoint side, rustier than the fabric-impressed opposite side, has faint, finely striated laminae, perhaps from an unidentified residue (Figure 53). While the residue is high up the blade, it could have come from a hafting substance.



FIGURE 52: CLOSEUP VIEW OF CLOTH REMNANT ON FERROUS SHEET METAL ARROWHEAD

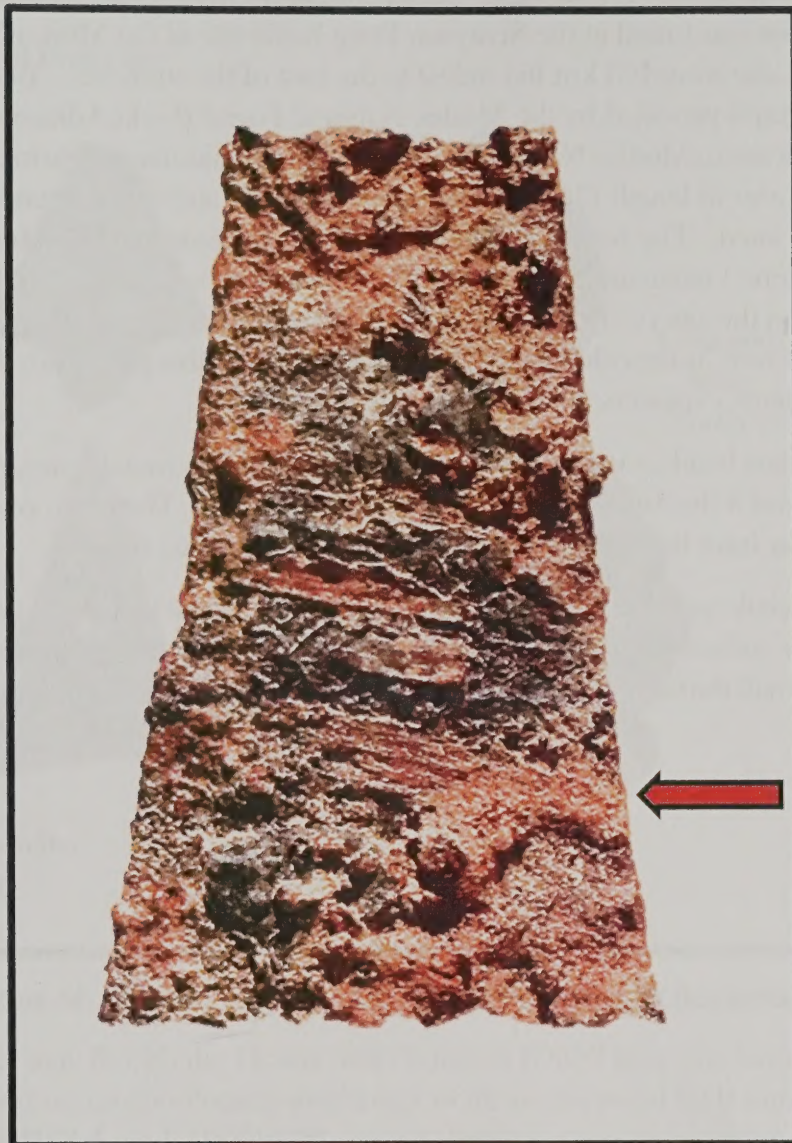


FIGURE 53: CLOSE-UP IMAGE OF RESIDUE LEFT ON FERROUS ARROWHEAD

The derivation of this iron point is problematical. The Hudson Bay Company traded similar points, at least some of which were stamped HBC. There is no such stamp on this specimen. An internet search found it is possible that local blacksmiths, as at Fort Union in New Mexico, made them for the Indians<sup>2</sup>. Similar metal points found at an 19<sup>th</sup> century Arikara village in South Dakota may have been made by village members from metal scraps derived from European sources<sup>3</sup>. LaPena (1978:330) illustrates a Wintu arrow with metal point collected in 1885 that is now stored at the Smithsonian. The Wintu are a neighboring tribe to the south of the Shasta. The illustration appears like the Common Cut specimen.

<sup>2</sup> ([nps.gov/fous/learn/historyculture/arrows-guns-and-buffalo.htm](https://www.nps.gov/fous/learn/historyculture/arrows-guns-and-buffalo.htm)).

<sup>3</sup> ([nmnh.typepad.com/rogrs\\_archaeology\\_lab/2016/01/cataloguing-the-larson-site-metal-artifacts.html](https://nmnh.typepad.com/rogrs_archaeology_lab/2016/01/cataloguing-the-larson-site-metal-artifacts.html))

A ferrous arrowpoint was found at the Scorpion Point battle site of the Modoc War in Modoc county near Tule Lake some 105 km (65 miles) to the east of the study site. Based on the site record and photograph provided by the Modoc National Forest (Vicki Adkison and Gerald Gates, personal communication, Modoc National Forest, 2021), this similar-appearing point (apparently not stamped) is shorter in length (2.5 cm) with a shorter blade and more extended barbs than the Common Cut specimen. The base is rectangular on both specimens. The Modoc site record also notes that Peter Skene Ogden and the Hudson Bay Company passed through this area in 1826. A recollection cited on the site record by one of the US Army troopers involved in the battle suggests the Modoc Indians were using rifles, so the exact association of this point with the battle or the Hudson Bay Company explorers appears uncertain.

Much as with the glass beads, various sources are possible for this metal point. Artifact associations with this point suggest it fits with the mid-19<sup>th</sup> century assemblage. However, one cannot dismiss the fact that this may have been held by the site occupants for some time.

Four obsidian projectile points were found either in the immediate vicinity of the shelter, or nearby, all from the surface (Figure 51). These are small projectile points likely manufactured for tipping arrows or small darts. All weigh less than one gram and are under 2.5 cm in length (Table 9).

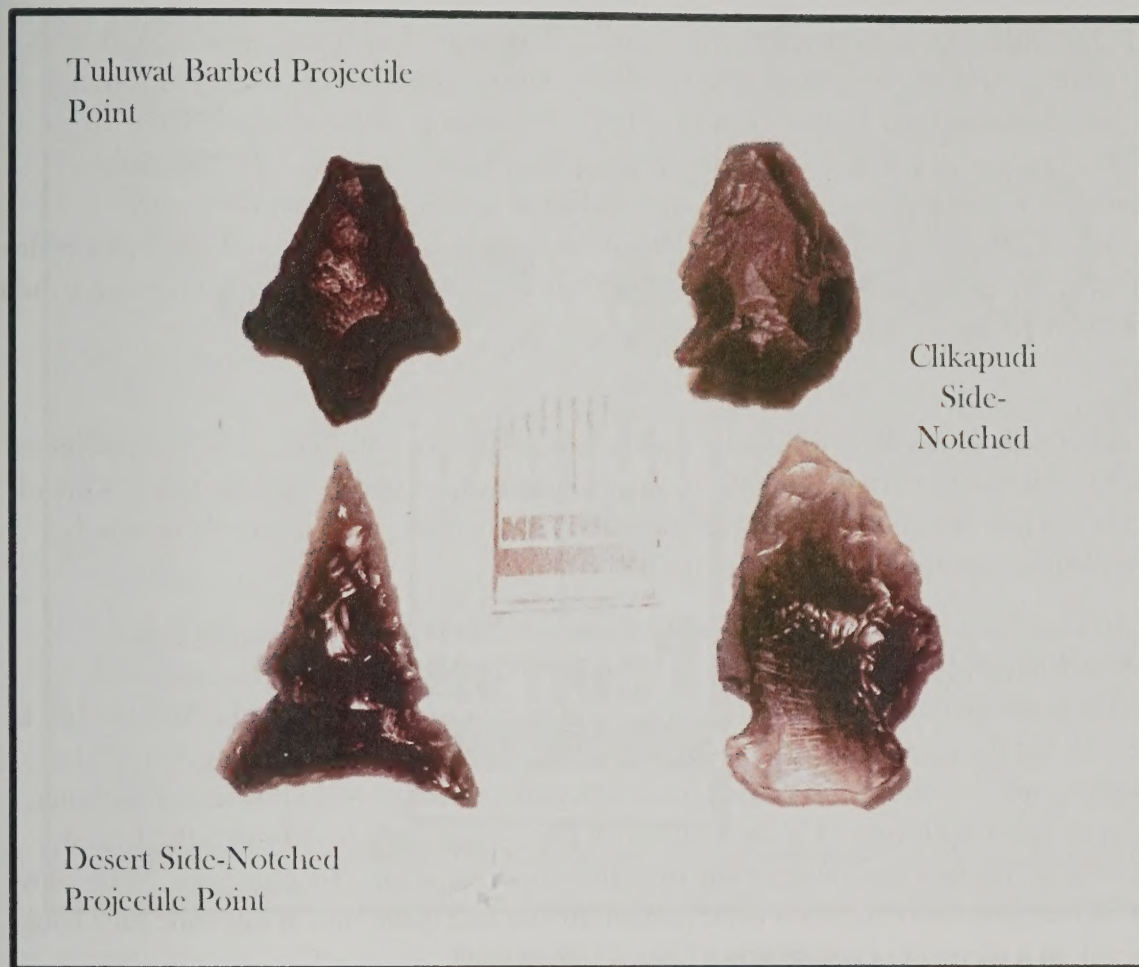


FIGURE 54: OBSIDIAN PROJECTILE POINTS FOUND NEAR ROCKSHELTER

One of these points may fit with the Desert Side-Notched (DSN) type, the latest flaked stone type for this vicinity based on morphological similarities to those discussed by Baumhoff and Byrne (1959). Basgall and Hildebrandt (1989:132) suggest they are a very recent introduction into the upper Sacramento River Canyon location. Mack (1991:40) offers a date for the Klamath River Canyon of A.D. 1600-1800, and for the Shasta Valley, Nilsson (1988:229) indicates they date from A.D. 1400 to historic times. The occurrence in the immediate vicinity of the study site in a historic context is also indicative of an episode around the time of European contact. (Dr. Joanne Mack, personal communication 2022, believes the DSN point could be a Klikapudi specimen).

Two of the recovered points appear to be Klikapudi Side-notched specimens dated between ca. 3000 and 2000 years ago according to Basgall and Hildebrandt (1989:144; Plate 5). These were found more distant from the shelter and may not be associated with the people occupying that overhang. One of the Klikapudi points from the cabin vicinity is made from obsidian from south-central Oregon (see APPENDIX 3), while the remainder of the points were manufactured from a closer-by Medicine Lake Highlands-vicinity source.

The Tuluwat (formerly Gunther) barbed point, first defined by Treganza (1958), is a late prehistoric/protohistoric type, likely overlapping in time with the Desert Side-Notched type. Mack

(1991:40), in her upper Klamath River Canyon synthesis, puts the date for this type at A.D. 250-1800. Her study of the Paradise Craggy Site (CA-SIS-1066H) only eight kilometers (five miles) south of the study sites indicates a date of A.D. 300-1850 for this point type (Mack 2003:14). Nilsson (1988:229) dates this type of point in the adjoining Shasta Valley as A.D. 300-historic times, a similar dating account offered in her later publication with Banks and Greenway (1989:85). Sundahl (2016:19), at the Chaney Site in the south reaches of Shasta Valley, places this point type in the last 1500 years of northern California prehistory. Obsidian hydration work would help to better place all these points chronologically.

### **Glass Beads**

Four glass trade beads were found within the shelter proper (Figure 5.5). Since 1/8<sup>th</sup> mesh screens were used for initial recovery, most backdirt was passed through a finer mesh flour sifter. One of the four beads was found with this backup method. There are likely more beads that could be recovered in the unexcavated portion of the shelter.

Each recovered bead is a different type as listed in Table 9. Bead color and characteristics generally follow Kidd and Kidd (2012). Colors include two in the blue range (cerulean and cobalt), with the other two black and ruby. Three of the four beads are translucent, with the black one opaque. All but the black bead are covered with a white patina. Three are simple, and the largest example, a split bead, is wound. Each bead is a different shape including barrel, globular, donut and oblate spheroid forms. The broken cobalt blue, oblate spheroid bead is the largest, fitting in the large (6-10 mm) size range, while the other three are small, 2-4 mm range. The ruby and black beads are just above the seed bead maximum size (2.2 mm), and at one time they could have been sewn on a garment or other item.

With only four glass beads, it is problematic to attempt to draw definitive conclusions regarding age, acquisition source, and function for these objects. As noted by Motz et al. (1986:117, 126) for northern California, glass beads were acquired in trade by the Native Americans from Russian, American, and Hudson's Bay Company trappers, and from gold miners, ranchers, colonists, and merchants. These authors also note (1986:125), following the observations by Layton (1981:127-136), that the Shasta participated in the Pacific-Plateau and Middle-Missouri commercial trade system dating from the end of the eighteenth century. A center of this trade, before the arrival of the European trappers and those of the Russian-American Fur Company and the Hudson Bay Company, was at Yainax Butte in Oregon, 120 kilometers (75 miles) northeast of the study site. These beads may have originated there or from other traders/sources like those listed above. For instance, Thomas McKay in 1836 on the nearby Scott River acquired 1800 beaver pelts for "glass beads, small mirrors, and axes" (Renfro 1992:91). Noteworthy, the Clikapudi point is made from obsidian from the general vicinity of Yainax Butte (ca. 30 miles or 48 km distant).

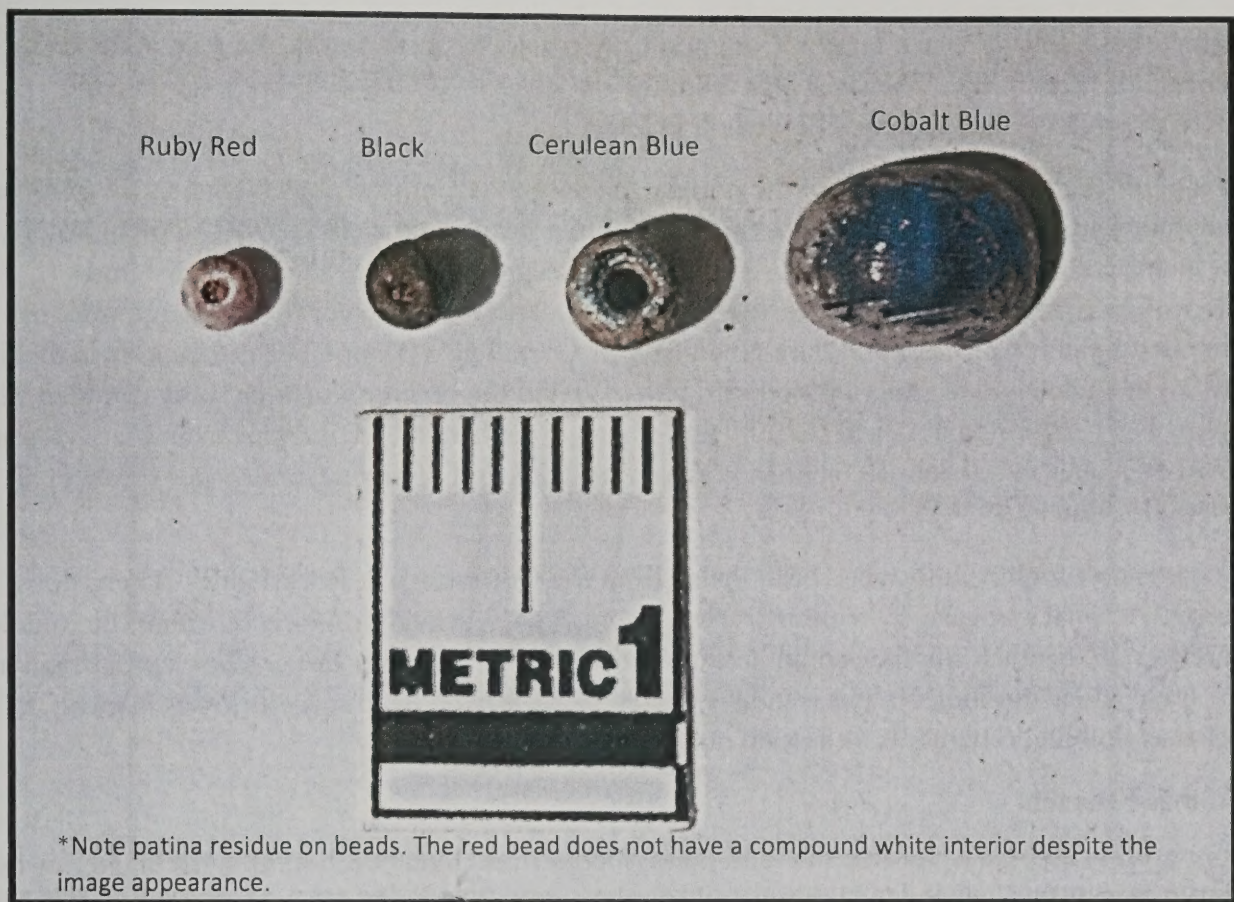


FIGURE 55: GLASS TRADE BEADS.

There have not been many studies of historic glass beads from archaeological sites in the north reaches of the State. Motz et al. (1986) report on glass beads from two Shasta cemeteries 3.5 kilometers (2.2 miles) and 4.5 kilometers (2.8 miles) to the south-southwest of the study site. Three of the beads from the Common Cut Rockshelter appear to fit the Motz et al.'s (1986:119-120) types, the black bead and possibly the blue beads. For the black bead, Motz et al. (1986:119-Type 5) note that it was popular from 1790-1910 in California with most examples from 1847-1867, including at the Hudson Bay Company's post at Fort Yukon.

The larger blue bead fits with Motz et al.'s (1986: 12) Type 14. These authors note it occurs in California in contexts dating 1800 to post-1900. Both the black, red, and blue types have also been found at Wintu sites in central Shasta County about 13.9 kilometers (8.6 miles) to the south (Ritter 1991). Beads from this site are thought to date from about 1850 to the 1880s serving mostly as burial accompaniments and with a preference for blue beads as at Common Cut Rockshelter (Ritter 1991:22). It is recognized that the identification of bead types through the visual method is somewhat subjective and that future researchers might find better comparative results from the use of chemical composition analyses such as suggested by Walder (2018).

A site record and collection at the Siskiyou County Museum for the Foster Site (CA-SIS-262) located 1.6 kilometers (1.0 miles) east of the study site reveals thousands of burial-accompanied beads. Motz et al. (1986) include a comparison of bead types from this site to their study

cemeteries. Only the black bead at Common Cut appears to occur among the several dozen or so types at the Foster Site. The latest coin from the site dates to 1860 based on the site record information recorded by James Bennyhoff in 1955.

It is pertinent to note that some of the popular Hudson Bay Company beads such as the globular red and white beads ("white hearts"), the blue faceted beads (and faceted beads of other colors, including colorless ones) are not present in this small sample (see Woodward 1967:9 and discussion by Hildebrandt and Darcangelo 2008:88). Likewise, missing are the compound, rounded small red exterior and dark green interior Cornaline d'Aleppo beads dating from the first half of the nineteenth century (Woodward 1967:19) and the common opaque small rounded white "pony bead" common at CA-SHA-2380 at Redding (Vaughan 2001:25) dating from the 1850s and from even later mid to late 19<sup>th</sup> century contexts at Shasta and Siskiyou County sites (Motz et al. 1986:119; Ritter 1991:18).

There is no certainty in the glass bead dating from the Common Cut Rockshelter. There does seem to be a lack of early 19<sup>th</sup> century types. Those present would positively fit within the middle and later 19<sup>th</sup> century, but they could be earlier and even curated over time. Their exact origin in the trade and acquisition circuits is indeterminate. The broken bead suggests losses from such items as clothing, ornaments, or regalia rather than offerings.

### **Clothes Fasteners**

Four artifacts that were devoted to clothes or suspender fastening were found in the shelter or its apron. A cuprous ½ inch length hook and eye clasp (No. 28) was found in Unit 1, 0-10 cm (Figure 56). A cuprous 4-hole button with embossed bands (No. 66) (11/16" diameter) was located on the shelter apron (Figure 57). A white porcelain Prosser 4-hole button with pic-crust design (15-32" diameter) also came from Unit 1, 0-10 cm (Figure 57). Finally, a ferrous 2-pronged suspender clasp (#74 in Table 9) was found on the shelter surface (Figure 57). The hook and eye clasp and porcelain button suggest female clothing. However, as observed by Franklin (2020:563), hook and eye fasteners can also occur with male clothing. The cuprous button and suspender clasp, perhaps even the Prosser button, may have served on men's clothing items like a man's shirt and suspenders. Whether these items were re-used or acquired by Native American Indians is uncertain, but the location is indeed suggestive.

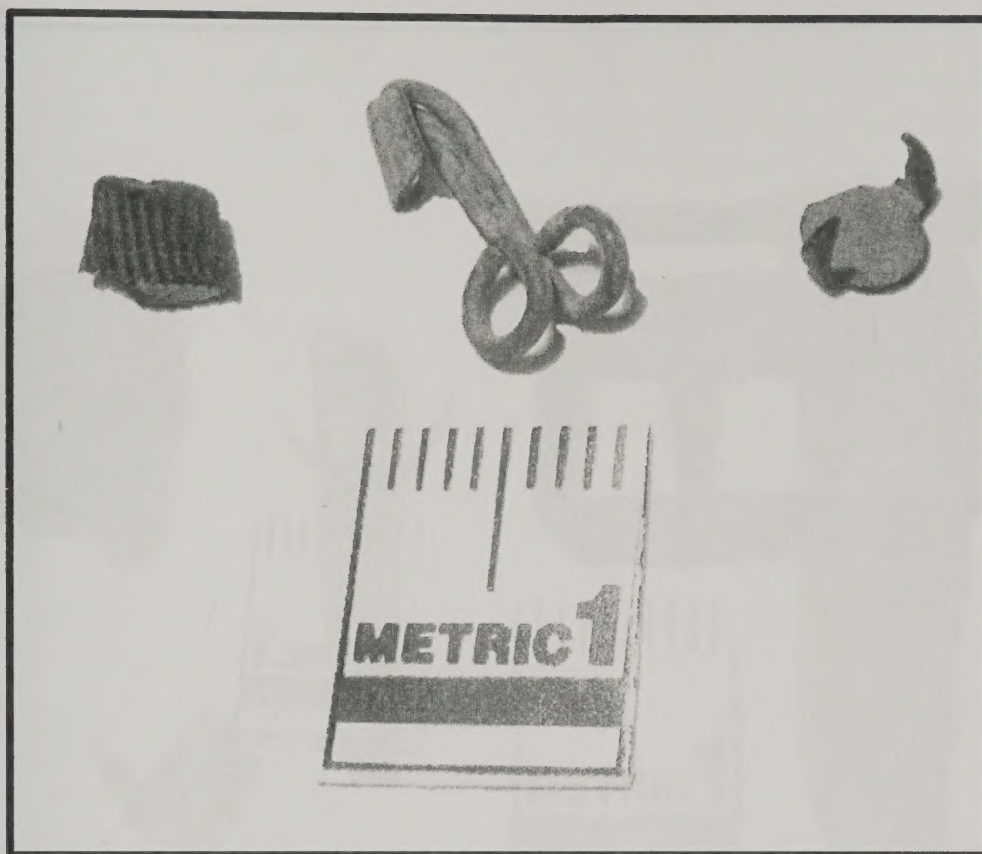


FIGURE 56: CUPROUS PISTOL PERCUSSION CAP, HOOK, AND EYE CLASP, AND PRONGED (TOBACCO?) TAG



FIGURE 57: FERROUS SUSPENDER BUCKLE, PORCELAIN PROSSER BUTTON, AND CUPROUS BUTTON

### Cuprous Two-Pronged Tag

A small 3/16" length oval cuprous tag with pointed prongs bent at a 45-degree angle (Figure 56) was found in Unit 1, 0-10cm. This artifact has some resemblance to a cut or plug tobacco tag that was developed for purposes of brand identification in 1870 (see Storino 1995). There are no identification marks on this artifact, and it is possible it was a tag for other purposes beyond tobacco. The 1870 date for the initiation of tobacco tags does not match well the chronological placement of other shelter recoveries.

### Ceramic Parts

At least two and possibly three ceramic artifacts are represented in the recovery, all very small pieces (Table 9). Dark brown glazed stoneware sherds were found individually in Unit 1, 0-10 cm level (No. 7, Table 9), and on the surface (No. 92, Table 9) (Figure 58). Two sherds occurred in Unit 3, 0-10 cm level (No. 85, Table 9). A very small dark brown glazed porcelaneous piece from Unit 2, 0-10 cm (No. 57, Table 9) could be a button, pipe, or bead fragment (Figure 58, lower left). White glazed earthenware sherds were individually removed from Unit 1 in the 0-10 (No. 38) and 10-20 (No. 7) cm levels, and two sherds occurred in the apron below the shelter. These are likely from plates or bowls, but they are quite small making exact functional determinations dubious. The size of the ceramic remnants implies on-site breakage and a degree of cleanliness, as larger pieces are not here or are infrequent based on the sampling.



FIGURE 58: BROWN CERAMIC SHERDS ON LEFT, NON-FERROUS METAL PIN OR NAIL, FERROUS TACK, AND BROKEN COMMON CUT NAIL

### Glass Shards

There were 26 small shards of glass found within excavation units and around the shelter (see Table 9). Two that may have been secondarily utilized as cutting-scraping tools are described above. Three blue bottle finish pieces are also mentioned in the above section.

Three window glass pieces occurred near the shelter, possibly from the presumed cabin adjoining. These measured 1.7 mm thick. This measurement is close to the 1.45 mm mean for window glass as measured from the Indian Trade Store at Fort Vancouver dating to the 1830s (Holliman and Ross 1975:1, 60). This suggests but does not prove a relatively early date for the window and presumed cabin.

The remaining shards and splinters are from at least six separate items based on the colorless, olive-green, green, dark green ("black glass"), light blue-green, and amber colors represented in the

finds. The curvature of some shards suggests liquor, medicine, or other types of bottles. The colorless splinter could be from the tumbler. The glass fragments do not exhibit conchoidal fracturing suggestive of bottle knapping. It is possible the small shards within the shelter could be broken remnants from preparation for such activities, but they may also be detritus from the nearby presumed cabin occupation as is perhaps the case with the cut nail presence.

### Percussion Caps, Lead Artifacts, and Gun Powder Can Lid

Two small, cuprous, reeded, pistol percussion caps were found in Unit 1 within the shelter and in Unit 3 outside the shelter (No's 21 and 86) (Figure 56). One cap appears to have the embossed letters GI on its head. On the surface of the shelter there was found the  $\frac{3}{4}$ " diameter lead powder can top. A ferrous oval can lid with a central circular hole with threads for a cap was found on the apron below the shelter. This is a part for a gun powder can, probably related to the lead lid found in the shelter (Figure 59). These artifacts demonstrate relatively early firearm use by the occupants, sometime in the 1830s-1860s range as an approximation for the widespread use of percussion caps and a regional historic contact perspective (see Table 1). Percussion caps and a percussion canister were found at the adjoining Rancheria Gulch hamlet.

Lead sheeting and sheeting fragments also occurred in the shelter (No's 31, 58, 73) (Figure 59). Perhaps these scraps were stock for manufacturing lead pistol balls. The final lead artifact is a circular lead seal (No. 76)  $\frac{1}{2}$ " in diameter (Figure 59). Like the similar artifact from the Rancheria Gulch Hamlet discussed above, this circular object may have been a package seal of early historic times subsequently used for bullet manufacture.



FIGURE 59: LEAD GUNPOWDER CAN LID (LOWER LEFT), LEAD TAG, AND LEAD SHEETING

## Shelter Nails

There were 15 common cut nail pieces, mostly broken, in the 4d to 12d size found in excavation units 1 and 2 (Figure 58). Also found were two Hungarian hob nails, one a #8 and the other a #10, probably lost from one or more boots. It is possible that the commercially manufactured and available common cut or machine cut nails were derived from a small section of flooring or another fixture within the shelter. They may also be detritus from construction and salvaging of the nearby cabin. How, and why they may have been transported from that location to the shelter is not known. Evidence of nails in the apron below the shelter are likely discard from the shelter environment.

TABLE 10. COMMON CUT NAILS AND TACK ON APRON BELOW SHELTER (METAL DETECTOR FINDS)\*

SIZE	3d-6d	7d-10d	12d-30d	Total
Whole	2			2
Bent/broken	1	3	4 (16d)	8
Shanks				6
Heads				2
Total	3	3	4	12 (no shanks)

\*One 10d brad and one tack were also found

TABLE 11. COMMON CUT NAILS FROM CABIN FOUNDATION ADJOINING COMMON CUT ROCKSHELTER

SIZE	3d-6d	7d-10d	12d-20d	Total
Whole	4	8	3	15
Bent/broken	4	7	8	19
Shanks				25
Heads				24
Total	8	15	11	58 (no shanks)

In the cabin vicinity there was observed 58 intact, bent, and broken common cut nails in the 4d to 16d range (Table 11) likely representing trim and framing nails removed following dismantling of a cabin. Four possible windowpane shards were also observed. Other artifacts include eight tin sheeting or undefined ferrous fragments, a lead fragment, lead bullet of undetermined type and caliber, a sherd of white glazed earthenware pottery, several shards of an olive-green bottle, a "black" glass bottle base of a paneled bottle, a wire bucket handle, hand forged bolt, ferrous neck of a shovel, a boot tack, and an obsidian projectile point (Figure 54) discussed above. It seems very possible that there was at one time an interplay of cabin occupants and the shelter due to their proximity (less than 75 m).

### **Small Metal Pin or Nail**

A small metal pin or nail,  $\frac{3}{4}$ " long and  $\frac{1}{8}$ " wide near the expanding head was found in the 0-10 cm level of Unit 1 (Figure 58). This specimen is rectangular in cross-section and tapers from the head which shows light pounding causing it to expand slightly and lip over the shank a little. The metal is shiny, non-ferrous like pewter or silver. There are small longitudinal cracks in the specimen, likely from when it was pounded into wood or other material. It clearly is a specialized item of unknown function.

### **Other Discoveries Outside the Shelter**

Below the shelter on the apron metal detecting was conducted resulting in the discoveries of 18 whole, bent, or partial common cut nails in the 3d to 16d size along with a brad and a tack (Table 9). Also found was a partial ferrous spike, a portion of the oval ferrous lid of a small (1" ln. x 1  $\frac{1}{2}$ " wd.) gun powder can, two metal hand forged straps with broken rivets, an olive-green liquor bottle kick-up, a possible boot tack, and an olive-green bottle shard. There were also 16 ferrous cannister fragments, a sardine can with heavy soldering measuring 1" long and 2  $\frac{3}{4}$ " wide; and a ferrous strap piece  $\frac{3}{4}$ " wide. Furthermore, there was observed a piece of ferrous wire, a possible small cuprous cannister, and a small basalt flake.

### **Faunal Remains**

There were 29 fragments of animal bone and two small unidentified terrestrial gastropod fragments found at the site (see Table 9). No formal faunal analysis was completed. For the most part these fragments were small, lacked articulating ends, and were not burnt. One larger herbivore tooth on the apron of the shelter is likely cow or horse. There was no distinction that could be made regarding what was human derived and what could be associated with animal activity. There are small rodent bones present, a split long bone of a mid to small size bird, herbivore (deer?) teeth, and long bone fragments of medium to large mammals such as a deer, including one fragment sent for radiocarbon dating (Figure 60) (APPENDIX 5:). One can suppose that at least some of the bone is from human activities that could include splitting long bones for marrow after meat consumption. The projectile points could be related to hunting behavior as well as defense. Hunting and animal procurement and processing at this site was at most small scale.

### **Fossilized Wood**

A small piece of petrified or fossilized wood was found in the 10-20 cm level of Unit 1. It is likely that that this is a natural occurrence since the bedrock of the shelter is from the Hornbrook Formation known to obtain fossilized wood (Elliott 2007).

### **Ash Feature**

In the southeast corner of Unit 2 just below the surface well into the 20 cm level there was encountered an ash lens 25+ cm long and 20+ cm wide with scattered charcoal flecks. A few fire-cracked rocks were observed with one cracked river cobble saved and catalogued (Catalogue #54). This clearly indicates a small fire was used in the shelter. Furthermore, in Unit 3 outside the shelter on the fronting apron small pockets of ash and charcoal flecks were noted during the

excavation. This and the scattered artifacts may have resulted from periodic shelter cleanup, including ash and charcoal from other presumed warming/cooking fires.

### **Pollen, Phytolith, and Starch Analysis**

Tests were run on rockshelter floor sediments for evidence of pollen, phytoliths and starches that might have economic or cultural importance regarding the human use of the rockshelter. This research was carried out by PaleoResearch Institute of Golden, Colorado as detailed in the attached report by Dr. Linda Scott Cummings (APPENDIX 4:). A sediment sample was procured during excavation from Unit 2, 0-10 cm. For comparative purposes, outside the shelter and apron below, 25 pinch samples of surface soil were obtained and combined for a control. These sub-samples were carefully acquired with fingers "in the pinch method" after cleaning a small patch of the surface litter with a clean trowel and then placing the sub-sample in a sterile Ziplock bag. The process was conducted being careful not to obtain any soil from directly beneath a tree or bush.

The difference in the samples between, within, and outside the rockshelter indicate elevated Poaceae and Aprocaceae pollen with clear presence of Poaceae phytoliths and starches in the shelter sediments. The Cummings report concludes (Appendix 4) that there is a suggestion of "processing grass seeds and corms from a member of the lily family." Interesting, modern Shasta have stated that *Brodiaea* sp. (once in the lily family but at present in the Themidaceae family) was one of the principal root foods of the Shasta following Ipos (*Perideridia* sp.) (Gleason 2001:690). Gleason's research in the nearby Upper Klamath River Canyon has led her to find that geophytes were one of the primary staple crops in the prehistoric inhabitants' overall subsistence economy (Gleason 2001:594). It is not surprising that they appear to have been a resource used by the occupiers of the rockshelter.

Regarding the Poaceae evidence, an examination of the ethnobotany work for the Shasta by Gleason (2001:747-750) shows that grass was used for several functions beyond eating including bedding, wrapping a tooth in grass, wiping one's face and hands, etc. Furthermore, the introduction of grass into the shelter by rodents in nests and for food must be a consideration as well as the fact that grasses were growing in the immediate vicinity of the deposit when research was conducted. At best we have only a suggestion of uses of grasses and geophytes by the shelter occupants.

### **Radiocarbon Dating**

A long bone wall fragment (Figure 60) of a possible deer (*Odocoileus hemionus*) likely butchered by shelter occupants was submitted to Beta Analytic Radiocarbon Dating Laboratory for dating. The results (Beta-502285) provided a conventional radiocarbon age of  $100 \pm 30$  BP (see APPENDIX 5:). This dating and the other probability ranges suggest an early historic/protohistoric occupation at the time the animal was apparently butchered.



FIGURE 60: ANIMAL LONG BONE FRAGMENT USED IN C-14 DATING (MM SCALE)

#### Discussion-Common Cut Rockshelter

The archaeological exploration of Common Cut Rockshelter consisted of a limited sampling of the shelter deposits, the colluvial apron below, and the presumed nearby cabin assemblage. (A case could be made that the cabin and the shelter are two different sites following current scientific methodology. How the occupants viewed the situation is, of course, probably quite different). That this report results from a modest testing program is a major consideration when examining and discussing the limited archaeological and environmental evidence. More work could be completed. With that caveat in mind, the resulting data are here advanced into what the authors view as reasoned inferences and conclusions regarding the lifeways exhibited by users of the shelter and likely cabin complex and their temporal duration.

The use of the shelter and cabin was short term and ephemeral, especially for the cabin. Native American Indians were likely periodically utilizing the shelter over a period of several hundred years, before and during colonial times. Contact with the European and Euro-American intruders was short term, probably in the 1840s and 1850s during a period of Shasta turmoil. The archaeological evidence is meager and lacks variation by horizontal and vertical stratification. Horizontal distribution of artifacts may be mixed between shelter occupants and whoever was

using the cabin, if not the same people. Many of the artifacts are badly fragmented, perhaps trampled in cases. There were seemingly times of cleanup and disposal of cultural materials and debris downslope. It is probable the cabin was related to the early mining period and linked to the nearby hamlet. Perhaps the shelter was associated with this early colonial/mining intrusion also for a time. Without more work at the cabin, especially excavations, one simply doesn't know its relationship to the hamlet and to Native American Indian use of the rockshelter.

Focusing on the rockshelter, the material culture largely supports male users (and possibly one or more females). Here, one can see bow and arrow use in hunting, pistol use within the shelter (hunting and/or practice), possible manufacturing of lead shot, the benefit of gunpowder, boot use (i.e., a boot tack-not illustrated), feasibly liquor consumption (and/or bottle re-use), suspenders, and a possible shirt button. On the other hand, female presence (in pre and post contact periods) could be implied by the hook and eye clasp, the Prosser button, plant acquisition (geophytes and perhaps grass seeds), meat and marrow preparation, small edge-modified obsidian and glass tool scraping and cutting (male use but female-related more probable for these latter artifacts), and perchance the glass trade beads for decoration. Of course, the beads could have been ornamentation on items generally ascribed to either males or females and even offerings in the religious sense.

It appears that various Shasta individuals, alone and/or in small family units, were occasionally using this rockshelter. At least one residential village of at least late prehistoric times, if not also Contact period, is nearby across the river and could be related.

The wall at the shelter front may have served as a protecting feature. There is no evidence within the shelter of domestic animal use, although a large herbivore tooth (horse-cow) was observed below the shelter and domestic grazing has taken place in this vicinity into modern times (see stock fence in Figure 13).

The geophyte and seed presence points to a spring-early summer occupation (cf. Gleason 2002:821) if not at different times during diverse periods. As stated above, there is no certainty regarding the relationship between the cabin and rockshelter. Their juxtaposition might be coincidental. There could even be a gap between shelter use by the Shasta and cabin function by a miner of European or other ancestry. There is also the likelihood that shelter use during prehistoric and European intruder times was periodic. One does not know what relationship this site had with the unexcavated nearby late prehistoric (possibly protohistoric) housepit-midden residential location just across the Klamath River east-southeast 450 meters (0.28 miles). No historic items have been found on the surface of the midden, but Tuluwat barbed projectile points have been observed there.

The occupants of the Common Cut Rockshelter were participants in a rapidly expanding world economic system with glass beads from Italy, ceramics likely from England, metal and glass items assumed from East Coast producers, and procurement of manufactured goods from local and distant traders and neighboring merchants as gold mining blossomed in this location. The Native American subjugation and displacement was ended (or nearly so) early in the historic period (in the Anglo-American sense of history).

As with the nearby hamlet, this operation was a testing program, an educational opportunity for volunteers and specialists, a way to garner at least a limited view of past lifeways here that can be further studied locally with conclusions and observations modified, changed, and augmented to the benefit of heritage specialists and the public.

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## APPENDIX 1

### Select Historic Deeds and Mining and Water Rights' Records for the Locality Siskiyou County Recorder's Office, Yreka Index to Mining Claims 1 & 2, Siskiyou County, 1852-1892

July 23, 1859, Book 1, page 118. Rocky Gulch (Cottonwood [District]), Rocky Gulch Co.

January 15, 1864, Book 3, page 134. Rancheria Gulch. Quartz. H.B. Warren et al.

May 4, 1869, Book 4, page 29. Rocky Gulch, Quartz Claim, Merritt & Co., Merritt & Co., J.D. Coughlin et al.; John V. Brown et al.

May 25, 1869, Book 4, page 39. Dutch Gulch (Cottonwood District), Quartz Claim. J.W. Oliver, D. Burton et al.

May 25, 1869, Book 4, page 40. Dutch Gulch (Cottonwood District), Quartz Claim. W. O. Vidal, J.C. McKendrix et al. (Includes information regarding 1850s work).

February 16, 1877 "Cottonwood". Frank Bull et al.

February 14, 1884, Book 6, page 129. Head of Dutch Gulch (Cottonwood District), Quartz Claim. James Scott et al.

October 26, 1886, Book 7, page 209. Dutch Gulch, Placer claim, W. R. Boyd and James Wheeler.

August 15, 1887, Book 7, pages 390-391. Rocky Gulch to Kanaka Frank's north line. Placer and Drift (Cottonwood District). Benjamin O'Connell, A.J. Smith, W. O. Jillson, S.A. Jillson.

July 23, August 15, 1887, Book 7, pages 391-392. Rancheria Gulch (Cottonwood Mining District), Blue Gravel Mining Company, A. McFarland, S. A. McIntosh, W. O. Jillson, Mrs. O. B. Jillson.

January 10, 1888, Book 7, page 553. Rancheria Gulch (Henley District, mouth of gulch on both sides of river, at the edge of the Grizzly Bar Mine). Placer Mine. W.O. Jillson.

### Siskiyou County Recorder's Office, Yreka Index to Deeds

February 10, 1858, Book 6, page 138. (Cottonwood District) Homer B. Warren Grantee, Charles Biebend, grantor.

September 25, 1888, Book 23, pages 286-287. Rancheria Gulch. Received from J. W. McIntosh et al. to C. B. Jillson, Superintendent of the Blue Gravel Mining Company, Blue Gravel Extension Mine.

### **Siskiyou County Recorder's Office, Yreka, Index to Water Rights**

July 2, 1852, Book 1, page 9 (under mines as part of water rights' records). Rocky Gulch (not sure which one), James Morgan et al.

February 14, 1855, Book 1, page 42 Rocky Gulch (uncertain which one). Wm. Allen & Co.

January 11, 1883, Book 2, page 72. Kanaka Gulch, Patrick Cronin et al.

Note: There were very likely water rights regarding water being transported from Ditch Creek to the Blue Gravel Mine in Rancheria Gulch vicinity in the later 1890s. Upslope from the study sites there are ditch remnants.

## APPENDIX 2

### Artifact Field Identification List: Rancheria Gulch Hamlet

The following compilation excludes nails and tacks listed elsewhere unless as noted. Objects are ferrous unless marked differently. Unit descriptions are in the order of recovery and notation. Measurements were not always taken in the field during discovery-notation process. Those measurements listed sometimes reflect the partial artifact size. Only items of museum quality or in need of further research were collected. Those artifacts collected have catalogue numbers listed beginning with the number 1906. Recovered project artifacts will be curated at the Siskiyou County Museum in Yreka, California.

#### UNIT 1 ARTIFACTS (all units are 25 m x 25 m)

7 white earthenware sherds  
Piece of 12-gauge wire  
2 flattened soldered lap seam canisters with external friction lids apparent. Size 3 ½" ht. x 3" diameter.  
2 small canister fragments  
8 fire-affected white earthenware sherds  
3 bottle corner shards of dark olive-green glass  
2 flat metal sheets with spaced holes (riddle plate for rocker)  
Flattened soldered seam can fragment  
.22 Winchester magnum brass casing with H head stamp  
3 aqua bottle glass shards  
6 flat colorless glass shards (window?)  
Light green glass shard  
Small pieces of white enamel likely from a non-human tooth (1906-88) (1906-12)  
7 colorless glass shards  
3 dark aqua bottle glass shards  
Light aqua bottle shard  
3 brown glass shards  
Light aqua glass bottle base with pontil mark (1906-11)  
Metal 4-hole button 5/8" diameter (1906-23)  
5 opalized glass shards  
½ white porcelain button  
3mm th. burnt window glass shard  
3 fire-affected brown glass shards  
3 burnt colorless glass shards  
Thin metal strap piece 3/8" wd.  
Canister lid, 6" diameter, hand soldered, external friction lid  
Lead fragment  
Buckle with roller 1" ln. x 7/8" wd. (1906-16)  
9-gauge wire pail handle

Metal hook (broken chain link?)  
 Canister lid, 2 3/4" diameter  
 Canister fragment, folded  
 Scale cup, 7/8" diameter  
 Deep aqua bottle brandy finish piece  
 Size 10 wood screw  
 2 size 4 wood screws  
 Canister lid with irregular solder around edge, perforated top 2 1/2" diameter  
 Aqua panel bottle shard  
 Cast iron stove leg, decorated with shield pattern with Fleur de Lis' (1906-9)  
 Crushed soldered seam canister, 3 3/4" ht. x 3" diameter. External friction lid?  
 Crushed canister 4 1/4" ht. x 3 3/4" diameter  
 2 metal strap pieces, 1" wd.  
 3 pieces of crushed lead sheeting  
 One half of powder can lid, 1 3/4"+ in length  
 Layered leather shoe/boot bottom with 3 headless boot nails present (1906-10)  
 Crushed lead sheeting box ca. 5" ln. x 5" wd. x 3" ht. with circular top hole and loose lid, perhaps friction. May have been painted white (1906-93)  
 Curved needle (for canvas?) 2" ln. and 0.064" dia. (1906-58)  
 Cuprous button with eyelet and setting for decorative inset, 1/2" diameter (1906-89)  
 Thin lead disc 13/16" (1.11 cm) diameter, 1/16" (0.2 cm) thickness with embossed rim and broken edge. Broken end of lead bale seal. May include letters HG (cf. Davis 2014 and McMahan 2003) (1906-37)  
 Lock shank broken swivel end 2" across, rod 1/4" diameter (1906-53)  
 Handle from drawknife (matches example in Unit 12 (1906-12)  
 Hand forged rectangular bar possible latch or door strike plate 6" ln. x 1 1/4" wd. with rectangular hole in center (1906-90)  
 Shoe heel plate 2 3/4" ln. x 2 1/4" wd. slightly cupped (1906-54)  
 Lead pistol ball, .36 caliber with mold mark or sprue not removed (1906-66)  
 White earthenware plate shard with makers' mark (T.J. and J. Mayer, 1843-1855) Furlong Works and Dale Hall Pottery, Burslem, Staffordshire Potteries, England (Godden 1964:424 and Praetzelis et al. 1983:52) (1906-82)  
 Lead pistol ball .36 caliber (1906-66)  
 Possible blacksmith stock bar with end "working" 8" ln. x 1" wd. x 1/4" th.  
 Pan handle with crimped edges  
 Strap 10" ln. x 1" wd. with small holes (for nails, rivets, or screws) every 1 3/8".  
 Shovel shank 5 3/4" ln.  
 Cut rib (cow?)  
 1" wd. rivetted strapping repurposed as tool  
 Box strapping with edge holes 13" ln.  
 Box strapping segment with edge holes 3 1/2" ln.

### UNIT 3 ARTIFACTS (partial surface collection)

Eley Brothers percussion cap tin lid 1 1/2" diameter, likely for 100 caps (post 1837 into at least 1860s according to *Wikipedia* (1906-28)  
Horse saddlery ring 1 15/16" diameter (1906-29)

#### UNIT 4 ARTIFACTS

Sheet metal tin fragments

.22 long brass casing with REM head stamp

Barrel or box strap section 7/8" width

Small piece of cut sheet metal

Metal wing hinge half with three screw holes, 2 3/4" ln. x 1" wd.

2 small flat cast iron pieces

Small crushed sheet metal piece

Small thin cuprous cup or cap 5/16" x 1/4" across x 1/8" ht. (1906-55)

.22 brass casing

5 lead bullets, 1 ball with casting or sprue remnant .36 caliber (1906-91), one with impact evidence (1906-67) and one ca. .50 caliber slug with impact evidence (1906-69).

Cut tin sheet piece

16 modern .22 casings, REM and SUPER

.22 BB cap brass casing (1906-26)

Square nut, 5/8" across

15-gauge wire piece

Small piece of tin sheeting

19 canister fragments

10 1/2" ln. slightly bent 1/8" square rod, tapered at end, small hole at other end that is flattened for attachment (1906-59)

Federal Cartridge Company brass casing

Canister fragment

Square canister cut piece (from sardine canister?)

Small pocketknife part (1906-15)

Boot tap 2 1/2" ln.

1 1-gauge wire rim

Cut canister fragment from a stamped end

Several tin sheets with rivets 3/4" diameter

Dinner spoon end

Dinner plate, 10" diameter with double-rimmed edge (1906-1)

2 strap pieces, 5/8" wd.

5 zinc sheet fragments, 1 1/4" ln., 5/8" wd.

3 sardine canisters 1 1/4" ln. x 3" wd., circular embossing in center

Base of sardine canister, 1 1/4" ln. x 3" wd.

Small tin sheet fragment

Brown glass shard

Thick square nut, 7/8" sides

12-gauge wire piece

Tin sheet fragment 3" x 2"

Bottom of pail 10" diameter  
 Tin sheeting piece  
 Thick, irregular sheeting piece  
 Canister end, 2 3/4" diameter  
 Small metal fragment  
 Dark green bottleneck shard  
 Hole-in-cap canister lid, 2 3/4" diameter  
 Flattened tin sheet with soldered edges, 2 small circular holes, and trapezoidal shape 8 1/2" ln. x 7 1/2" wd.  
 Light aqua glass shard  
 Large cut canister fragment, soldered seam with external friction lid  
 Strap piece 5/8" wd. with rivet  
 Small cast iron plate rim  
 Canister fragment with crimped edge  
 .44 Henry Winchester cuprous casing (post 1860, likely post 1871)  
 ([https://en.wikipedia.org/wiki/.44\\_Henry](https://en.wikipedia.org/wiki/.44_Henry))(1906-39)  
 Sardine canister top  
 Horseshoe nail, size 7+  
 Dark green bottle shard  
 Shovel shank 5 3/4" ln.  
 Small horseshoe nail shank  
 Button 1/2" diameter, likely cloth part missing (1906-95)  
 Large coffee pot filter  
 21 canister fragments  
 Heavy slab 3/4" wd., 6"+ ln. with one central rivet, miscellaneous manufactured small holes, and edge modifications (machinery part?)  
 Large horseshoe nail head  
 Aqua glass bottle fragment from DR. VANDERPOOLS COUGH AND CONSUMPTION CURE. Dr. Larkin Vanderpool, Dufur, Oregon. Likely 1890s according to Matt Knapp, medicine bottle expert, Frederick, Maryland (personal communication, July 19, 2018) (1906-61)  
 Small suspender buckle  
 Small horseshoe nail head  
 Small, scalloped edge lid 1 1/2" diameter  
 12-gauge wire piece  
 Green glass shard  
 4 lead gun balls (1906-65 for one)  
 Broken cone-shaped artifact end or tip (?) with slot (1906-61)  
 4 modern .22 casings  
 Strap section 5/8" wd.  
 Medium-sized horseshoe nail  
 3 .22 Federal brass casings  
 Cast iron pot rim piece  
 3 small zinc-coated strips  
 Dark olive-green bottle shard  
 White improved (?) earthenware pitcher handle  
 Sewing pin

Aqua glass shard  
 Broken wedge, hammered on end (1906-14)  
 11-gauge wire piece  
 Strap piece 6"+ folded, 7/8" wide with red lacquer finish  
 Amber glass bottle shard  
 Sardine canister, top sliced and peeled 4 1/4" ln. x 3" wd.  
 13-gauge wire piece  
 External friction lid, 2 7/8" diameter, hole punched in middle  
 14-gauge wire piece  
 Rectangular canister lid, 4 3/4" x 3 1/2"+, 1/8" wd. folded edge  
 Hole-in-Cap canister lid 2 3/4" diameter  
 White improved (?) earthenware small saucer or bowl sherd  
 16-gauge wire piece  
 2 small cast iron fragments  
 2 small cut tin sheet pieces  
 Cuprous folded strap piece 1/2" wd. with 2 punched nail holes and fine diamond pattern on one side (1906-30)  
 .44 centerfire cuprous cartridge (1906-84)  
 Silver-plated flatware handle, bent, threaded pattern (1906-36)  
 Aqua panel bottle shard with embossing ...BRO... (1906-96)  
 Brass shotshell base, possibly Peters Quick Shot 16 gauge—post 1897 (1906-86) (Vinson 1968:91).  
 Cuprous clip or reinforcing strip for leather or cloth item (bag?) along one end or side 7 1/2" ln. x 3/16" wd.; rounded with split down middle and malleable for attachment (1906-14)  
 Cuprous rim-fire ca. .50 caliber cartridge crimped at bullet end and no evidence of pin strike—possible secondary use (1906-87)  
 Size 9 wood screw  
 Size 10 wood screw  
 Broken wood screw  
 Cuprous boot or shoe tip (2 1/4" x 5/8" x 3/8") with ferrous boot nails for attachment (1906-24); stamped PAT. NOV. 29, 1859. Patent No. 26,329 by N. Silverthorn

#### **UNIT 9 ARTIFACTS (small test unit's screened contents included)**

Two dark olive-green bottle shards  
 Colorless glass shard  
 11 canister fragments  
 Small sherd from white improved (?) earthenware bowl  
 7 pieces of flat cast iron  
 Small canister container lid, possibly sardine, 3 1/2" ln. x 2 1/2" wd.  
 3 shards of opalized colorless glass  
 Strap piece 7 1/4" ln. x 5/8" wd.  
 2 modern 12-gauge shotgun casings  
 Strap piece 5/8" wd.  
 Crystal, thick, shot or tumbler glass part (1906-83)  
 Tin sheet, folded  
 Tin sheet with folded edges, 9 1/4" x 5"  
 Strap piece with small round holes at each end, 5/8" wd.

9-gauge wire hooked on each end for hanging over fire?  
 Canister, folded with external friction lid  
 Joined strap pieces with two rivets, 1" wd.  
 14-gauge wire piece  
 Crushed canister, hand soldered lap seam, stamped ends, 5 1/2" ht. x 2 3/4" diameter  
 .22 REM brass casing  
 Canister with cut top, hand soldered lap seam, stamped end, 5" ht. x 4" diameter. Various sizes of square to rectangular (common cut/hand forged nail-derived?) holes and one large central punched square hole on end forming sieve (1906-2)  
 Crushed canister, lap seam, 6 3/4" ht.  
 Small canister with soldered top and bottom---soldered by hand, external friction lid type, 3" ht. x 2 1/2" diameter (1906-6)  
 Rectangle cut on lid of "sardine" can 4" ln. x 3" wd.  
 8 canister fragments  
 External friction lid, 2 1/8" diameter  
 Crushed canister, lap seam, 4" ht.  
 Flat cast iron stove part  
 Canister 4" ht. x 3 1/2" diameter--possible baking powder can  
 Tin specialty box part, embossed rectangle on lid, 2" x 2"  
 Crushed small canister, external friction lid, bottom soldered, 3" ht.  
 Small fragment of rectangular canister with friction lid  
 Tin sheet with edges folded, 5"+ ln. x 4" wd.  
 Brass container cap, 1" diameter  
 External friction lid  
 Aqua (?) paneled bottle fragment  
 White earthenware plate sherds (2-3?)  
 Folded tin sheeting with punctured holes around edge. 2 1/2" ln. x 2 1/4" wd.  
 Flat metal rectangle 4" ln. x 1/8" wd. with small brass strip around edge, possibly a satchel or bag spring?  
 11-gauge wire piece  
 Needle 3 1/2" ln. x 1/16" th. (1906-79)  
 Light aqua bottle shard  
 Cut tin sheeting piece 3" ln. x 2 3/8" wd.  
 Canister external friction lid 2 1/2" diameter with embossed square  
 3 Chinese Double Happiness rice bowl sherds (1906-15) (1906-18)  
 3 fire affected colorless glass shards  
 Opalized colorless flat glass shard (window) 1/8" th.  
 21 fragments of rubber boot heel  
 Cast iron Dutch oven lid part, ring band decoration (shattered vessel remnant)  
 15-gauge wire piece  
 2 cast iron fragments  
 Rectangular canister (sardine?) 4 1/2" ln. x 4" wd. x 1" ht. (1906-5)  
 6 fire-affected colorless glass shards  
 External friction lid with lap seam canister part, 2 1/2" diameter  
 Large dark aqua bottle shard  
 15-gauge wire type spool

Black glass base with ...& C...

Unknown small metal mechanism, folded, punched holes through ends, cut measuring 1" wd. x 1/8" th.

Strap segment 3/4" wd.

Burnt animal long bone 2 1/2" ln. x 1/4" th.

Two external friction can lids, 2 1/2" diameter (one collected 1906-11)

Hole-in-cap canister top with square cutting

Heavy ring with inner ring showing at one surface, 2 7/8" diameter x 1 1/2" depth

Strap piece 1" wd. with circular nail or rivet holes every 1 1/2"

Strap segment 5/8" wd.

Canister lid with folded edge

Hole-in-cap canister lid

5 canister fragments

Friction canister lid, possibly with handle

Brass harmonica reed (1906-31)

External friction can lid, 6" diameter

Cut piece of tin sheeting 4" ln. x 3" wd.

Folded side of rectangular canister, soldered seam

Modern .45 caliber lead slug

Rolled out tin sheeting 1 1/16" wide with three holes punched through for nails or rivets

Canister lid 4"+ ln. x 2 3/4" diameter

4 pieces of cuprous sheeting

Dark aqua bottle shard

3 pieces of burnt animal bone

Tin sheeting rolled around 9-gauge wire

Boot sole 9" ln. x 3" wd. after shrinkage (leather?)

Cuprous .44-10 Winchester casing—post 1866 (1906-16)

Sardine-like canister 4 1/2" x 3"

White earthenware sherd

Small cuprous fragment

Crushed canister, cut at both ends, external friction type, lap seam, 3" ht.

Canister fragment

Plain spoon handle, pewter (1906-32)

Powder can with lead top, 4" ht. x 3 1/2" diameter (1906-7)

Cast iron stove part, curved lip like for pot-bellied stove, 5 1/2" x 4"

Strap segment riveted 1" wd. x 10" ln.

Modern .30 x .30 brass Winchester casing

Flattened canister 10" ln. x 5" wd. used as strainer

2 leather boot fragments, 4" ln x 2" wd. and 2" x 2" with hobnail holes

Canister lid 4" diameter with 1" hole for soldered cap

Rectangular canister top, 9" square with handle

Friction can lid 2 1/4" diameter

Friction canister lid 2 1/4" diameter

Friction lid canister 4" ht. x 2 1/4" diameter

Canister lid 2 3/8" diameter

Possible meat canister 4" x 4" x 1 1/4"

Sardine-like canister 4" ln. x 3" wd. x 1" ht.  
 2 flattened canister fragments, 3 1/2" x 3" and 12" x 2"  
 Cast iron stove part, 5 5/8" ln. x 5" wd.  
 Part of cast iron 4 qt. container with handle tab (matches part in Unit 10) (1906-8)  
 Broken red brick 2" th. x 3 1/2" wd., length unknown  
 2 colorless glass shards, less than 1" ln.  
 Cast iron fragment 1 5/8" ln. x 1 1/4" wd. x .098" thick  
 Large shovel neck with triangular plate riveted onto blade of shovel—sluice shovel?  
 11 white earthenware sherds, three burnt; some possibly white improved earthenware sherds  
 45 canister fragments  
 12 shards of colorless glass with heat damage  
 .22 brass casing  
 3 brown glass shards with heat damage  
 2 brown bottle glass shards, one with ...&C...  
 Pail flattened, 10.5" diameter, 6" depth with rolled rim, riveted handle attachments  
 Flattened tin sheet rectangular piece 3 1/4" ln. x 1 3/4" wd.  
 Canister lid with folded edges, punched with multiple small 1/8" holes (sieve) (1906-19)  
 Strap piece 5/8" wd.  
 Corner of rectangular container lid  
 3 flattened friction lidded cans 3 3/4" ht. x 3" diameter  
 3 .22 hollow point brass cartridges with REM head stamps  
 Probable window glass shard  
 Canister lid with soldered rim and cut edge, 2 1/2" diameter  
 Box lid with wire under folded edge and lead soldered hinge in center along edge. Rectangular embossing around lid, 4 7/8" diameter with a cut height of 2 1/8"  
 4 ornate, knob-pattern, thin, burnt brown glass shards  
 7 canister lids with folded edge, 2 1/2" diameter  
 4 olive green glass shards  
 Partially flattened canister 3 " ht., 2 1/3" diameter  
 2 cast iron fragments  
 Large, folded canister fragment with soldered seams  
 2 canister friction lids 3" diameter  
 Repurposed container with folded edge on one side, 9" ln.  
 Repurposed container, collar-like shape with folded edges and soldered seam, flat and 1 1/2" wd.  
 Cuprous sheet fragments, possibly from opium tin  
 Thin metal strip 4 3/8" ln. x 3/16" wd.  
 Canister lid 3 1/2" diameter  
 Cut edge of tin sheeting, 9 1/2" ln. x 1 1/2" wd.  
 Aqua glass shard  
 Threaded jar top 2 1/8" diameter, 5/8" depth  
 Strap segment 6" ln. x 5/8" wd.  
 Friction canister lid with folded edge, 2 1/4" diameter  
 Horseshoe-shaped heel tap 2 5/8" ln. with attachment holes  
 Small circular lid with lead center punched through – with lettering BANKER'S Pat. Dec. 12 76. (1906-70) Patent No. 185158—"Oil Can Faucet"  
 Spoon bowl (handle missing) (1906-50)

Canister friction lid with 20 uniform circular holes on 1/2 of lid (for sprinkling powder-like substance?)  
 Ornate opalized glass shard with raised design not decipherable  
 Square metal piece 1 3/4" across with cut edges  
 Strapping piece 2 1/4"+ ln. x 5/8" wd.  
 3 olive green glass shards  
 12-gauge wire segment  
 Canister fragment with folded edge  
 Canister fragment with soldered joint  
 Cuprous suspender top piece 1 3/8" wide lacking embossing  
 Rectangular outer portion of suspender buckle with edge rilling, 1 1/8" ln. x 13/16" wd. (1906-47)  
 Hand-forged nail with hooked end, 2 3/4" ln.  
 2 pieces of strapping, 7/8" wd.  
 14 canister fragments  
 Rectangular bar-like possible handle piece 1 3/4" ln. (As broken) with 1/4" diameter holes spaced 1 1/4" apart  
 Tooth from suspender buckle  
 .22 brass casing with REM on head stamp  
 Flattened friction canister lid (snuff?)  
 Canister lid with folded rim 2" diameter  
 Rectangular cut tin sheeting with hole in corner, 3" ln. x 2" wd.  
 Hole-in-cap canister lid fragment  
 Canister friction top lid, folded, 2 1/4" diameter  
 Strap segment 3"+ ln. x 5/8" wd.  
 3-pronged fork with wooden handle, 5 1/2" ln. (1906-38)  
 Portion of riddle plate with machined holes of various sizes. Piece measures 4"+ ln. x 3 1/3"+ wd.  
 Flattened possible machinery handle with ridges  
 12-gauge brass shotgun shell base, No. 12, U S DEFIANCE  
 .22 brass casing, SUPER X head stamp  
 Heavy strap piece 3"+ ln. x 1/4" wd.  
 Strap piece 5"+ ln., 7/8" wd. with punched holes  
 Cuprous cylinder covering over 12-gauge wire cut off near ends of cylinder that measures 1 1/2" ln. x 3/8" diameter. Possible electrical igniter or insulator part (1906-60)  
 Stacked, compact pieces of lead sheeting  
 Cast iron piece 1 1/4" x 1 1/2" as broken  
 Broken cast iron strip 1 1/2" wd. with contoured edges  
 Cuprous cap with ferrous pin in center, 7/8" diameter. Base for sitting candle in height adjuster on candlestick holder. (1906-78)  
 2 strips of 5/8" wd. strapping riveted together with 2 rivets, 2 1/2" ln.+  
 Gumshoe (?) boot sole, 9 1/2" ln. with nails inside, textured rubber cloth and possible leather components, 3" wd. (1960-4)  
 Hand-forged nail 2 1/2" ln. with square head (1906-77)  
 Cuprous possible locket 3/4" dia. with snap lid, hinge, and hole for stringing (decorated edges rilled or finely grooved) (interior contents missing) (1906-62)  
 White earthenware plate base with impressed maker's mark T.J. & J Mayers, Longport, England (1843-1855) (Praetzelis et al. 1983:53) (1960-21)

2 size 8 wood screws

## UNIT 10 ARTIFACTS

Cast iron pot fragment

Cast iron small pot base fragment with short leg

2 small thin flat pieces of cast iron

Two cast iron matching kettle parts 6.25 meters apart. Original vessel approximately 1' dia., 5 ½" ht. with "Devil's ear" handles (one present)

2 pieces of cast iron vessel base with mold seam in the middle—heavy-duty vessel

Cast iron fragment 2 1/8" x 2 ¼"

Medium-sized canister fragment with solder seam evident

4 canister fragments, stamped end evident

Canister fragment 2" x 1 ½" in size as found

2 small canister fragments less than 1" across as found

Hole-in-cap canister lid 2 1/8" diameter

Small, soldered tin canister fragment

Canister (snuff?) 3' ht. lap seam, external friction lid (1906-20)

3 pieces of early (hand soldered) hole-in-cap canisters

Small scrap of tin, possibly a lid fragment

Edge of canister

Cuprous unmarked firing cap from a pistol

Full metal jacket modern rifle bullet

3 .22 lead slugs

.36 caliber lead pistol ball (1906-68)

Three pieces of 13-gauge twisted wire

Small piece of 20-gauge smooth wire

Small metal strip or band

Small metal strap piece 1 ¾" wide x 1/8" thick

Small metal strap piece

Very small strap fragment

Small strap fragment less than 1" long

2 small metal fragments

2 small tin sheeting fragments

3 bent pieces of heavy sheet metal, one with 5 punched holes and half-circle cut on edge. Piece measures 5 ¼" ln., 1 ¾" wd. with a ¾" lip

Small metal fragment ¼" wd. x 1/32" th.

Small piece of tin sheeting

Small cut piece of tin sheeting

Rectangular (sardine?) tin can 4" ln., 3 1/16" wd.

Large circular canister lid (unmeasured)

Early 20<sup>th</sup> Century car hood piece with handle

Soldered canister friction lid 4 ¼" dia. x 5 1/8" ht.

Friction lid canister fragment

Knife handle with cuprous pins for bone or ivory attachment,  $\frac{3}{4}$ " width (1906-33)  
 Washer 1  $\frac{1}{8}$ " diameter  
 Square nut 1  $\frac{1}{16}$ " across  
 Riveted shovelhead shank  
 4 qt. cast iron container (matching piece in Unit 9) (1906-3)  
 2 fragments of cast iron vessel(s)  
 2 2" fence staples  
 Horseshoe, hand forged with toe and heel calks  
 Thin metal stay (satchel spring?)  
 Small latch fragment, part of hook?  
 Piece of 13-gauge wire twisted  
 6 crumpled pieces of lead sheeting  
 4 canister fragments  
 Cast iron kettle lid fragment 5  $\frac{1}{2}$ " x 4  $\frac{3}{4}$ " as broken  
 Tapered cast iron bar, two holes on one end, hole on opposite end. One end is 3  $\frac{1}{8}$ " wd. x 2  $\frac{1}{8}$ " th.; other end is 5  $\frac{1}{2}$ " wd. and 2  $\frac{1}{4}$ " th.  
 Canister fragment 2" x 1  $\frac{1}{2}$ "  
 Bail handle 9-gauge  
 Cast iron pot base fragment 4  $\frac{1}{2}$ " ln.  
 Metal sheet fragment with rolled edge on one side—can or bucket piece  
 2 crushed snuff-like canisters (1" ht. x 3" dia.; 3  $\frac{1}{4}$ " ht. x 3" dia. estimates)  
 Canister lid 2  $\frac{1}{2}$ " diameter  
 Size 4 wood screw

## UNIT 12 ARTIFACTS

2 aqua glass vessel shards  
 Tin sheet piece (1" x 3")  
 Clear glass shard  
 Possible deformed lead ball or conical-shaped bullet (1906-94)  
 Small white earthenware sherd 1  $\frac{1}{8}$ " x  $\frac{3}{4}$ "  
 3 soldered seam canister pieces  
 2 small tin sheet fragments  
 Small obsidian biface thinning flake  
 Strap piece 3" x 1"  
 Crushed possible snuff or baking powder can ca. 3  $\frac{1}{4}$ " ht. x 3" dia.  
 Cast iron lid (?) piece 3  $\frac{1}{2}$ " x 3"  
 2 canister pieces with folded edge cut from container  
 Canister lid 2  $\frac{1}{4}$ " diameter  
 Lead sheet strip 5" x 1"  
 Small hole-in-cap can, soldered, stamped end, external friction lid, 3" ht. x 2  $\frac{1}{8}$ " diameter (snuff?)  
 Brass instrument cap 1  $\frac{1}{2}$ " diameter x 1  $\frac{1}{8}$ " ht. (1906-34)  
 Friction lid can, soldered seams, 3" ht. x 2  $\frac{3}{4}$ " diameter (snuff?)  
 Folded soldered-seam can, 4" ht., folded  
 Green glass bottle shard

Canister fragment, external friction lid, cut, 4" ht. x 3 1/4" dia.  
 Small lead sheet fragment  
 Canister external friction lid, 2 1/4" diameter  
 Barrel strap piece 7" ln. x 3/4" wd.  
 Heavy ferrous possible key-latch piece 3" ln. x 3/4" wd. x 3/8" th. (1906-63)  
 Small canister fragment  
 Small cuprous tab 13/16" diameter  
 Cuprous coin purse frame with ferrous interior, 2 1/2" ln., 3/16" wd., gilded gold, two snaps (1906-43)  
 2 cut pieces of tin sheeting, ca. 4" x 3 1/2" and 4" x 2 1/2"  
 2 small strap pieces  
 Fence staple 7/8" ln.  
 Small tin fragment  
 2 cut tin canister pieces, one an end  
 Canister top, 4"+ diameter  
 Shovel head, 1'1" x 9 5/8"  
 Small strap piece 3" ln. x 1" wd.  
 Crushed can, external friction lid, folded seam 5 1/2" ht. x 3" diameter  
 Small white earthenware sherd  
 Canister lid, 3" diameter  
 Triangular piece of cut tin sheet, 7" x 2 1/2"  
 3 small, folded tin sheet pieces  
 Small metal fragment  
 Long strap, 1' x 1" (box?)  
 Folded tin sheet with cut central hole, 3 7/8" x 3 3/4"  
 Cuprous cover 1/2" width  
 Small colorless glass shard  
 Small canister fragment  
 .22 rim fire brass casing  
 Small washer 1/2" diameter  
 Small aqua glass shard  
 Small obsidian biface thinning flake  
 Sardine (?) canister 4 1/4" ln. x 3" wd. x 15/16" ht.  
 Blitz crown cap  
 Coffee grinder fragment (1906-10)  
 Green glass bottle shard  
 2 .22 brass casing with C on head stamp (modern-Cascade, made in Mexico)  
 Aqua glass bottle shard ...OR... or ...OP...embossed lettering  
 2 small tin sheet fragments  
 Soldered can fragment  
 Brown glass shard  
 Small tin fragment  
 Colorless glass drinking glass rim piece  
 Small modern metal clip with "43" inscription  
 Top of canister, folded—estimate 3 5/16" diameter  
 3 tin sheet pieces

3 pieces of a shovel shank  
 Brown paneled bottle shard  
 Deep aqua bottle shard  
 Smashed soldered canister, 1# size approximately  
 Tin fragment cut on one side  
 Brass strip possibly from opium tin  
 Handle from double-handled drawknife (1906-13). Matches handle from presumably the same implement found in Unit 1 over 50m away.  
 Small buckle 1 1/4" ln. x 13/16" wd. (1906-85)  
 2 canister fragments, one a rim edge  
 Crushed canister fragment  
 Strap piece 5/8" wd.  
 Hole-in-cap can fragments, seam soldered, stamped ends  
 9-gauge wire piece  
 .22 brass rim fire casing  
 Crushed can 5" ht. x 4 1/2" dia., external friction lid, machine soldered seam  
 Skeleton key (1906-35)  
 Brown glass shard  
 Two green glass shards  
 2 aqua glass bottle shards  
 Polychrome (chrome-colored?) earthenware sherd (1906-52) (also see general surface finds list for another sherd of this pattern) Post ca. 1830 (<https://www.jefpat.org/diagnostic/Post-Colonial%20Ceramics/PaintedWares/ChromeColor...>)  
 Obsidian projectile point fragment (1906-51)  
 Folded small tin sheet piece  
 Buckle with PATENTED 1855 embossing (1906-25)  
 Canister fragment  
 Small metal fragment  
 Canister external friction lid 2 1/4" diameter  
 Rubberized shoe or boot heel with partial horseshoe protection tap 2 3/8" wide  
 Copper-jacketed bullet remnant  
 Cut and folded tin scrap  
 Cut small tin piece  
 Crushed sardine-like can 4 1/2" ln. x 3 1/2" wd.  
 Metal strip piece 1/2" wd.  
 Thin cuprous metal comb part 2 1/4" ln. x 1 1/8" wd. (1906-18)  
 Cast iron handle 4 1/8" ln., 1 1/4" wd. x 5/16" th.  
 Small suspender buckle piece (1906-92)  
 Coffee grinder part  
 External friction canister lid 3" diameter  
 10-gauge wire bail/handle  
 Horseshoe 5" ln. x 1/8" wd.  
 Small metal strip piece 1/8" wd.  
 .22 lead bullet  
 Coffee grinder part  
 Angle iron piece from box (?) with rivets. 4" ln. x 5/8" wd. x 1/2" wd.

Canister lid fragment 3 5/8" diameter  
 .22 short brass casing with P head stamp  
 Turquoise/aqua bottle base—condiments?  
 Coffee maker grinder fragment—different apparatus from those listed above  
 Buckle 2" ln. x 1 1/4" wd. (1906-22)  
 Colorless glass shard  
 2 white improved (?) earthenware sherds  
 Small fragment of cuprous sheeting  
 Coffee maker handle part  
 Hand forged pick or crevassing tool from blacksmith bar stock 6 1/2" ln. x 3" wd. x 3/8" th. (1906-17)  
 Possible umbrella or parasol stay ca. 8" long with "swivel" end (1906-81)  
 Aqua bottle shard with ...RDSO... and ...OP.. or ...OR... (1906-72). These may relate to Wells & Richardson Co., HALL'S BALSAM FOR THE LUNGS (post 1873 according to Fike 1987:63), or S.O. RICHARDSON'S PECTORAL BALSAM (Knapp 2015:809) or RICHARDSON TAYLOR MED. CO. ST. LOUIS, MO.  
 (<http://www.antiquemedicines.com/MedicineNexus/T/T.htm>)  
 13 boot nails (1906-80)  
 Small D-shaped buckle 1" ln. x 7/8" wd. (1906-27)  
 Small, thin circular disk 5/8" diameter with opposing pointed tabs. Cut plug tobacco tag? (1906-56)  
 Heavy comb tooth 1 3/8" ln. x 1/8" maximum wd. (1906-57)  
 Bone pieces, including a young cow/calf  
 2 mid-size horseshoe nails

### General Surface Finds

Agua bottle shards (AYERS SARSAPARILLA COMPOUND, LOWELL MASS, USA) (post 1858--Hoyt and Hoyt 2018) (1906-71)  
 Amethyst bottle neck (1906-73)  
 Polychrome (Chrome?) earthenware sherd (1906-76). (Similar sherd from Unit 12)  
 White earthenware cup fragment (1906-75)  
 Agua bottle shard with ...SAM...GS. Possible Hall's Balsam for the Lungs, Dr. W. Hall Co., New York introduced ca. 1850 (Fike 1987:21, Fig. 51) (1906-74)  
 Small, shaped slab of sandstone exhibiting tool sharpening grooves

### APPENDIX 3

#### Obsidian XRF Results

Geochemical Research Laboratory Letter Report 2018-59

*Energy Dispersive X-ray Fluorescence Analysis of Obsidian from  
Common Cut Rockshelter, Siskiyou County, California*

Dr. Eric W. Ruetz  
Bureau of Land Management  
Redding Field Office  
6640 Lockheed Drive  
Redding, CA 96002

August 30, 2018

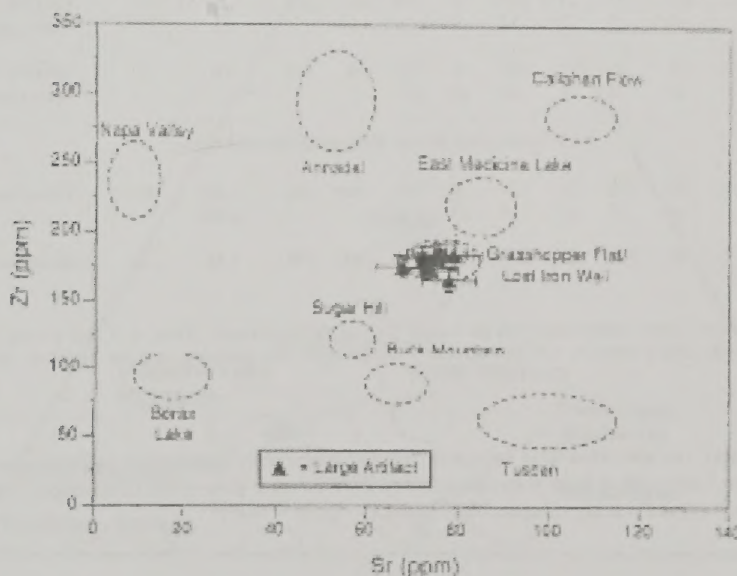
Dear Eric:

This letter reports the results of energy dispersive x-ray fluorescence (edxrf) analysis of 22 obsidian artifacts recovered from excavations at Common Cut Rockshelter, located near Homestead in Siskiyou County, California. This analysis was conducted pursuant to your note accompanying the specimens, which I received on August 22, 2018. Artifact-to-source (geochemical type) attribution procedures, element-specific measurement resolution, and literature references applicable to these samples follow those I reported for artifacts from Shasta and Tehama counties (Hughes 2012).

Eleven of the specimens you sent were large enough to generate quantitative composition estimates (see Table 1). As Table 1 and Figure 1 show, all of them were manufactured from volcanic glass of the Grasshopper Flat/Lost Iron Well (Medicine Lake Highland) variety (Hughes 1986: Table 5).

Figure 1

Zr vs. Sr Composition of Large Obsidian Artifacts from Common Cut Rockshelter



Dashed lines represent the range of variation measured in geologic obsidian source samples. Filled triangles plot the artifacts listed in Table 1. Error bars are two sigma (95% confidence interval) composition estimates for each specimen. The numbers of artifact plots do not correspond exactly to the tabulations in Table 1 because of convergence of data points at this scale.

Table 1

Quantitative Composition Estimates for Obsidian Artifacts from Common Cut Rockshelter

Cat. Number	Trace Element Concentrations									Ratio		Obsidian Source (Chemical Type)
	Ga	Rb	Sr	Y	Zr	Nb	Ba	Ti	Mn	Fe/Qt <sup>T</sup>	Fe/Mn	
2147-2	nm ±4	149 ±4	72 ±3	28 ±1	181 ±1	119 ±2	766 ±22	nm	nm	nm	50	GFLLW, Med. Lake Highland
2147-2a	nm	186 ±4	73 ±3	27 ±3	182 ±4	10 ±2	716 ±18	nm	nm	nm	50	GFLLW, Med. Lake Highland
2147-2b	nm	138 ±4	72 ±3	29 ±3	174 ±4	10 ±2	794 ±27	nm	nm	nm	47	GFLLW, Med. Lake Highland
2147-17a <sup>c</sup>	nm	213 ±4	76 ±3	25 ±3	166 ±4	10 ±2	799 ±26	nm	nm	nm	36	GFLLW? Med. Lake Highland
2147-41	nm	150 ±4	73 ±3	30 ±3	185 ±4	11 ±2	748 ±15	nm	nm	nm	51	GFLLW, Med. Lake Highland
2147-51a	nm	150 ±4	76 ±3	30 ±3	183 ±4	11 ±2	736 ±10	nm	nm	nm	47	GFLLW, Med. Lake Highland
2147-51b	nm	148 ±4	79 ±3	29 ±3	184 ±4	11 ±2	748 ±11	nm	nm	nm	50	GFLLW, Med. Lake Highland
2147-71a	nm	150 ±4	72 ±3	27 ±3	184 ±4	9 ±2	744 ±22	nm	nm	nm	52	GFLLW, Med. Lake Highland
2147-85	nm	142 ±4	68 ±3	27 ±3	171 ±4	9 ±2	742 ±22	nm	nm	nm	49	GFLLW, Med. Lake Highland
2147-86	nm	139 ±4	73 ±3	27 ±2	175 ±4	9 ±2	748 ±23	nm	nm	nm	51	GFLLW, Med. Lake Highland
2147-63	nm	142 ±4	73 ±3	30 ±3	182 ±4	10 ±2	719 ±22	nm	nm	nm	50	GFLLW, Med. Lake Highland
<i>U.S. Geological Survey Reference Standard</i>												
BGM-1 (measured)	nm	150 ±4	108 ±3	23 ±1	221 ±1	9 ±3	809 ±33	nm	nm	1.88 ±.02	67	Glass Mt., CA
BGM-1 (recommended)	15	149	108	23	219	9	807	1600	279	1.86	ar	Glass Mt., CA

Values in parts per million (ppm) except total iron (in weight %) and Fe/Mn intensity ratios; ± = two σ 4-sig. counting uncertainty and regression fitting error at 120,160 seconds live-time; nm = not measured; nrt = not reported; ± = heavily polluted.

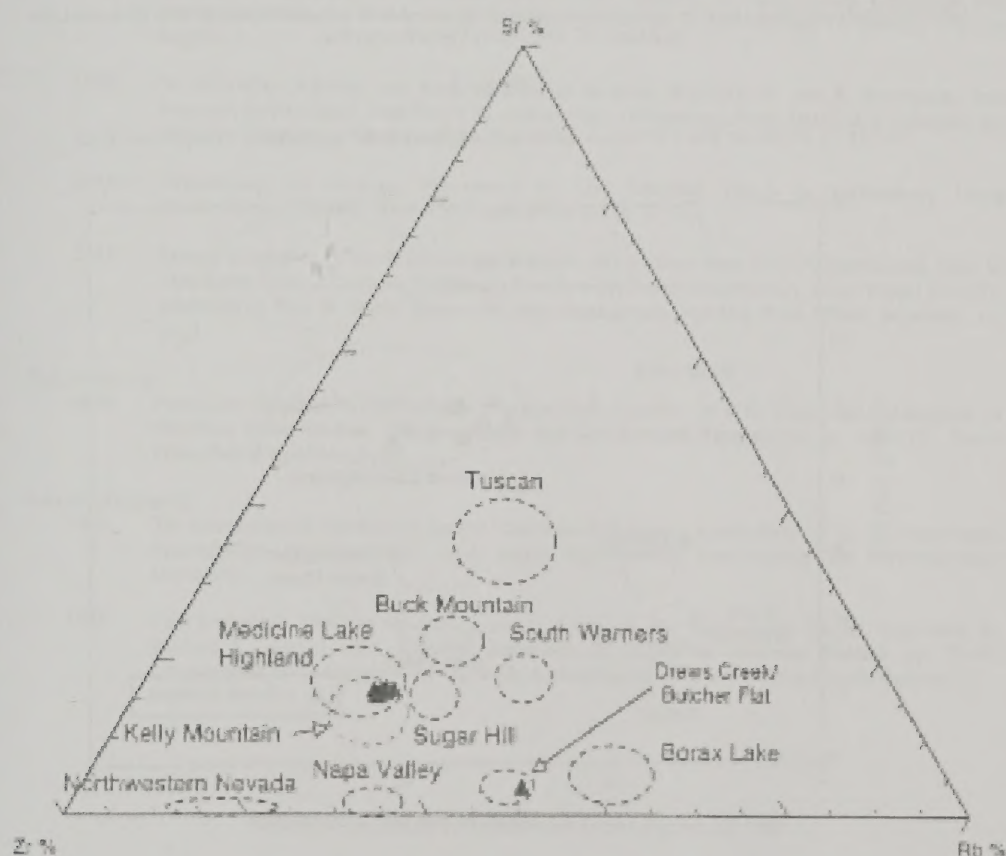
Eleven of the specimens you sent were large enough to generate quantitative composition estimates (see Table 1). As Table 1 and Figure 1 show, all of them were manufactured from volcanic glass of the Grasshopper Flz/Lost Iron Well (Medicine Lake Highlands) variety (Hughes 1986: Table 8).

I generally report trace element measurements in quantitative units (i.e. ppm) and make artifact-to-source attributions on the basis of correspondences in diagnostic trace element concentration values (e.g. those presented in Table 1), but eleven of the specimens you sent were too small and this to generate x-ray counting statistics adequate for proper conversion from background-corrected intensities to quantitative concentration estimates (i.e., ppm). I analyzed these small flakes to generate integrated net count (intensity) data for the elements Rb, Sr, Y, Zr, Nb, Fe and Mn. After background subtraction, the intensities (counts per second) were converted to percentages. The counting data and derived ratios appear in Table 2, and the plotted values appear in Figure 2. Source assignments were made by comparing the plots for artifacts against the Rb/Sr/Zr parameters of known source types identified archaeologically in the northern Sacramento Valley (following Jackson 1974; 1989; Figure 3; Jack 1976; Figure 11.1a, 11.2a) and by comparison with geologic standards in my extensive in-house reference collection. Further discussion of this analysis technique, and problems in the use of ternary diagrams, appears in Hughes (1998, 2010).

In this particular case Rb/Sr/Zr plots (Figure 2) effectively separate and identify the sources for these small flakes. As Figure 2 shows, although there is overlap in Rb/Sr/Zr values between Medicine Lake Highland and Kelly Mountain obsidians, plots for other elements (see Figure 3) document that all ten of these specimens were manufactured from Medicine Lake Highland – not Kelly Mountain obsidian.

Figure 2

Ternary Diagram Plots for Small Obsidian Artifacts from Common Cat Rockshelter



Dashed lines represent range of variations in geologic obsidian source samples. Filled triangles plot specimens from Table 2.

Table 3

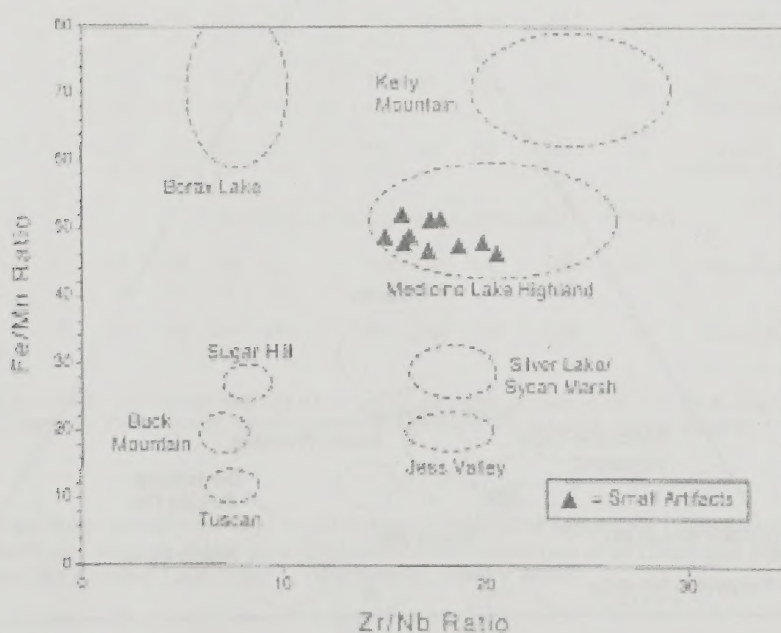
Integrated Net Count Rate Data for Small Obsidian Artifacts from Common Cut Rockshelter

Cat. no.	Element Intensities					Intensity Ratios					Obsidian Source			
	Rb	Sr	Zr	$\Sigma$ Rb,Sr,Zr	Rb/Sr	Sr/Zr	Zr/Rb	Fe/Mn	Ba/Sr	Zr/Y	Y/Nb	Zr/Nb	Sr/Y	(Chemical Type)
2147-1	294	170	580	1004	.381	.163	.556	46.8	1.7	8.5	2.0	17.1	2.5	MLH
2147-2	283	178	611	1092	.359	.163	.578	53.2	1.6	7.7	2.1	15.8	2.2	MLH
2147-4a	326	190	682	1198	.372	.159	.569	47.9	1.7	7.9	2.0	15.9	2.2	MLH
2147-4b	295	178	646	1119	.364	.159	.577	48.9	1.7	8.6	1.7	15.0	2.4	MLH
2147-5	312	190	646	1148	.372	.166	.563	49.0	1.6	9.3	1.9	16.2	2.5	MLH
2147-17b	266	177	617	1110	.367	.160	.574	51.5	1.7	8.4	2.1	17.7	2.3	MLH
2147-19-1	304	180	657	1141	.366	.158	.576	46.5	1.7	7.2	2.8	20.5	2.0	MLH
2147-26a	328	197	690	1215	.370	.162	.568	47.6	1.7	8.4	2.1	18.6	2.4	MLH
2147-26b	305	180	634	1119	.373	.161	.567	48.0	1.7	8.3	2.4	19.8	2.4	MLH
2147-51c	301	176	655	1132	.366	.156	.579	51.4	1.7	8.1	2.2	17.2	2.2	MLH
2147-51e	305	23	301	629	.485	.017	.479	15.0	13.3	3.8	4.6	6.0	5	DC/BF

Elemental intensities (peak counts/second above background) generated at 40 seconds live time. MLH= Medicine Lake Highland, DC/BF= Drees Creek/Butcher Flat

Figure 3

Fe/Mn vs. Zr/Nb for Small Obsidian Artifacts Undifferentiated by Rb/Sr/Zr Composition Data



Dashed lines represent range of variation in geological obsidian source samples. Symbol plots the artifacts listed in Table 2.

In summary, combining quantitative composition estimates (Table 1) with integrated net count rate data (Table 2) the edxrf instrumental analysis results show that 21 artifacts analyzed from Common Cur Rockshelter were manufactured from Grasshopper Flat/Lost Iron Well volcanic glass, and that a single flake was made from Drews Creek/Butcher Flat obsidian.

I hope you will find this information useful in your overall evaluation of the significance of this site. Please contact me (lab phone: 650/851-1410; e-mail: rehughes@silcon.com; web site: www.geochemicalresearch.com) if I can provide any further assistance or information.

Sincerely,

*Richard Hughes*

Richard E. Hughes, Ph.D., RPA  
Director, Geochemical Research Laboratory

### References

- Hughes, Richard E.
- 1986 *Diachronic Variability in Obsidian Procurement Patterns in Northeastern California and Southeastern Oregon*. University of California Publications in Anthropology 17, Berkeley and Los Angeles.
  - 1998 On Reliability, Validity, and Scale in Obsidian Sourcing Research. In Ann F. Ramonofsky and Anastasia Steffen (eds.), *Unit Issues in Archaeology: Measuring Time, Space, and Material*, pp. 103-114. University of Utah Press, Salt Lake City.
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*Energy Dispersive X-ray Fluorescence Analysis of an Obsidian Flake from Reed's Mining Complex, Siskiyou County, California*

September 4, 2018

Dr. Eric W. Rittler  
Bureau of Land Management  
Redding Field Office  
6640 Lockheed Drive  
Redding, CA 96002

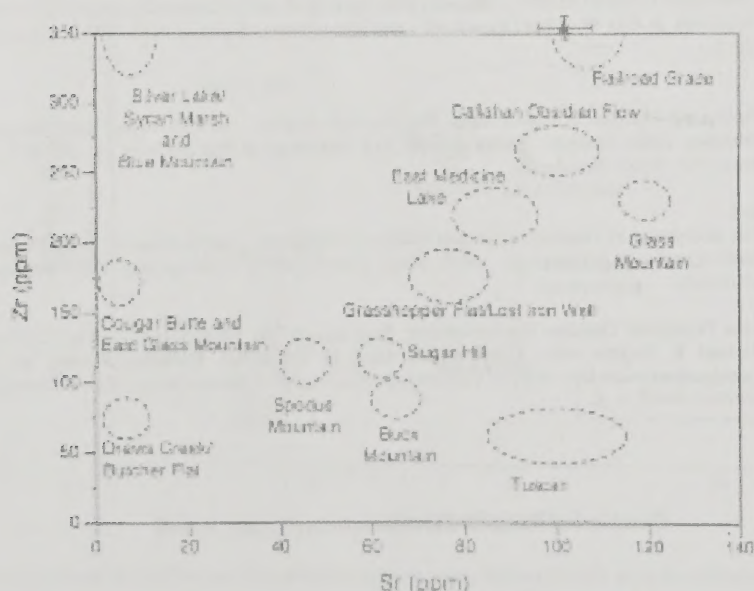
Dear Eric:

This letter reports the results of energy dispersive x-ray fluorescence (edxrf) analysis of one obsidian flake recovered from Reed's Mining Complex (BLM site CA-636-1906), located near Hornbeck in Siskiyou County, California. This analysis was conducted pursuant to your note accompanying the specimens, which I received on August 31, 2018. Artifact-to-source (geochemical type) attribution procedures, element-specific measurement resolution, and literature references applicable to these samples follow those I reported for artifacts from Shasta and Tehama counties (Hughes 2012).

Table 1 and Figure 1 show that this flake corresponds with the trace element signature of volcanic glass of the Railroad Grade chemical type, Medicine Lake Highland (Hughes 1986, Table 5).

Figure 1

*Zr vs. Sr Composition of an Obsidian Flake from Reed's Mining Complex*



Dashed lines represent the range of variation measured in geologic obsidian source samples. Filled triangle plots the artifact listed in Table 1. Error bars are two sigma (95% confidence interval) computation estimates for the specimen.

Table 1

Quantitative Composition Estimates for an Obsidian Flake from Reed's Mining Complex

Cat. Number	Trace Element Concentrations										Ratio		Obsidian Source (Chemical Type)
	Ga	Rb	Sr	Y	Zr	Nb	Ba	Ti	Mn	Fe/Cl <sub>2</sub> <sup>T</sup>	Fe/Mn		
1926-51	nm	124 ±4	102 ±4	36 ±3	165 ±6	12 ±2	888 ±25	nm	nm	nm	63	Railroad Grade, Med. Lake Highland	
----- U.S. Geological Survey Reference Standard													
RGM-1 (measured)	nm	153 ±4	105 ±3	26 ±3	223 ±4	10 ±3	815 ±23	nm	nm	1.86 ±.02	64	Glass Min., CA	
RGM-1 (recommended)	15	149	108	25	219	9	807	1800	279	1.86	nr	Glass Min., CA	

Values in parts per million (ppm) except total iron (in weight %) and Fe/Mn intensity ratio; ± = two σ x-ray counting uncertainty and regression fitting error at 120-360 seconds livetime; nm = not measured; nr = not reported.

I hope you will find this information useful in your overall evaluation of the significance of this site. Please contact me (lab phone: [650] 851-1410; e-mail: rehughes@silicon.com; web site: www.geochemicalresearch.com) if I can provide any further assistance or information.

Sincerely,

*Richard Hughes*

Richard E. Hughes, Ph.D., RPA  
Director, Geochemical Research Laboratory

## References

- Hughes, Richard E.  
1986 Diachronic Variability in Obsidian Procurement Patterns in Northeastern California and Southcentral Oregon. University of California Publications in Anthropology 17, Berkeley and Los Angeles.  
2012 Energy Dispersive X-ray Fluorescence Analysis of Obsidian from Four Archaeological Sites in Shasta and Tehama Counties, California. Geochemical Research Laboratory Letter Report 2012-77, submitted to Eric W. Riser, Bureau of Land Management, Redding Field Office, September 14, 2012.

#### APPENDIX 4:

#### Pollen, Phytolith, and Starch Analysis

POLLEN, PHYTOLITH, AND STARCH ANALYSIS OF SAMPLES FROM  
THE COMMON CUT ROCKSHELTER, CA-030-2147, SISKIYOU COUNTY, CALIFORNIA

By

Linda Scott Cummings

With assistance from  
R.A. Varney

PaleoResearch Institute  
Golden, Colorado

PaleoResearch Institute Technical Report 2018-077

Prepared for  
Bureau of Land Management

Redding, California

November 2018

## INTRODUCTION

Site CA-030-2147 is a small rockshelter situated in the foothills of the Klamath Mountains near the town of Hornbrook in Siskiyou County, California. The rockshelter was occupied between the late prehistoric and early historic period. A sample collected from the shelter was submitted for pollen, phytolith, and starch analysis to identify evidence of local vegetation and possibly use. In addition, a "pinch" sample was collected in the vicinity of the shelter to provide control for the pollen analysis.

## METHODS

### Pollen

Sediments often present unique challenges for pollen preservation and recovery, meaning that larger samples are required for land sediments than for pollen recovery from lake sediments or peat bogs. A chemical extraction technique based on flotation is the standard preparation technique used in this laboratory for recovering pollen grains from sediments. This particular process was developed for extracting pollen from soils where the ratio of pollen to inorganic material is relatively low. It is important to recognize that it is not the repetition of specific and individual steps in the laboratory, but rather mastery of the concepts of extraction and how the desired result is best achieved, given different sediment matrices, that results in successful recovery of pollen for analysis.

Hydrochloric acid (10%) was used to remove calcium carbonates present in the sediment samples, after which, they were screened through 250-micron mesh. Multiple water rinses until neutral employ Stoke's Law for settling time. After settling the supernatant was poured off. A small quantity of sodium hexametaphosphate was mixed into each sample to suspend clay-sized particles prior to filling the beakers with water. Again, multiple rinses employing Stoke's Law and decanting facilitated clay removal. Treatment with sodium hexametaphosphate was repeated, as necessary, to remove clay. This process was repeated with ethylenediaminetetraacetic acid (EDTA), which removes clay, soluble organics, and iron. Finally, the samples were freeze-dried under vacuum.

Once dry, the samples were mixed with sodium polytungstate (SPT), at a density of 1.8 g/ml, and centrifuged to separate the organic material including pollen and starch, which floats, from the inorganic remains and silica, which do not float. The supernatant containing pollen and organic remains was decanted and retained. The sodium polytungstate process was repeated to recover all of the organics. Once the organics were recovered, the accumulated supernatant was centrifuged at 1,500 rpm for 10 minutes to allow small-sized silica to be separated from the organics. This supernatant was decanted into a 50-ml conical tube and diluted with reverse osmosis deionized (RODI) water and centrifuged at 3,000 rpm to concentrate the organic fraction in the bottom of the tube. This pollen-rich organic fraction was rinsed, then all samples received a short (25 minute) treatment in hot hydrofluoric acid to remove remaining inorganic particles. The samples were acetylated for 10 minutes to remove extraneous organic matter. The samples were rinsed with RODI water to neutral. Following this a few drops of potassium hydroxide (KOH) were added to each sample which was then stained lightly with safranin.

A light microscope was used to count pollen at a magnification of 500x. Pollen preservation in these samples varied from good to poor. An extensive comparative reference housed at PaleoResearch Institute aided pollen identification to the family, genus, and species level, where possible.

Pollen aggregates were recorded during pollen identification. Aggregates are clumps of a single type of pollen and may be interpreted to represent either pollen dispersal over short distances or the introduction of portions of the plant represented into an archaeological setting. The aggregates were included in the pollen counts as single grains, as is customary. An "A" next to the pollen frequency on the percentage pollen diagram notes the presence of aggregates. The percentage pollen diagram was produced using Tilia 2.0 and TGView 2.0.2. Total pollen concentrations were calculated in Tilia using the quantity of sample processed in cubic centimeters (cc), the quantity of exotics (spores) added to the sample, the quantity of exotics counted, and the total pollen counted and expressed as pollen per cc of sediment.

Pollen extraction retains starch granules. Since starch analysis was requested for one of these samples, not only were starches recorded as part of the pollen count, an additional search for starches was conducted. We did not, however, search for starches outside the pollen count of the control sample. Starch granules are a plant's mechanism for storing carbohydrates. Starches are found in numerous seeds, as well as in starchy roots and tubers. The primary categories of starches include the following: with or without visible hila, hilum centric or eccentric, hila patterns (dot, cracked, elongated), and shape of starch (angular, ellipse, circular, or lenticular). Some of these starch categories are typical of specific plants, while others are more common and tend to occur in many different types of plants.

### **Phytolith Extraction from Sediment**

Extraction to recover phytoliths from the sediment samples is based primarily on our phytolith extraction method. First, 15 ml of sediment from the sample was placed in a beaker with bleach. After being agitated it was covered and allowed to stand overnight. The next day the beaker containing samples were filled with water and allowed to settle by gravity for one and one-half hours, after which the supernatant was poured off. This rinse was repeated four times to remove the bleach. A small quantity (10 ml) of dilute (10%) potassium hydroxide (KOH) was added to the sample after the fourth rinse, allowed to sit for two minutes, and then the beaker was filled with water for another series of four rinses on the same schedule. Once these steps were complete, 15 ml of a 5% solution of sodium hexametaphosphate was mixed into the sample to suspend clay-sized particles. Again, the beaker was filled with water and allowed to settle by gravity for two hours, after which the clay-sized particles that were still in suspension were decanted. This was repeated four more times. The sample then was freeze-dried using a vacuum system, which freezes out all moisture at -107 °C and < 10 millitorr. The dried sample was mixed with sodium polytungstate (SPT, density 2.1 g/ml) and centrifuged to separate the phytolith fraction, which will float, from most of the inorganic silica fraction, which will not. The light fraction of the sample was retained and rinsed to remove the heavy liquid. The phytolith-rich fraction of the sample was rinsed in alcohol to remove any remaining water. A microscope slide was made by putting a drop of sample on a slide, allowing it to dry, then mixing with optical immersion oil prior to covering with a cover slip for counting with a light microscope at a

magnification of 500x. A percentage and/or frequency diagram was produced using Tilia 2.0 and TGView 2.0.2.

## ETHNOBOTANIC REVIEW

Archaeological studies reference ethnographically documented plant uses as indicators of possible, or even probable, plant uses in pre-Columbian times. Ethnobotany, the study of the relationship “between people of primitive societies and their environment” (Schultes 1962 in Chandra and Rawat 2015:124), provides evidence for both broad and specific historic exploitation of numerous plants. Multiple ethnographic sources evidencing a plant’s exploitation suggest its widespread historic use and an increased likelihood of the same or a similar plant’s use in the past. We consulted a broad range of ethnographic sources both inside and outside the study area to permit a more exhaustive review of potential plant uses. Ethnographic sources document historic use of some plants enduring from the past. Most likely medicinal plant use persisting into the historic period originated in pre-Columbian times. An estimated 17.1% of the world’s flora comprise medicinally important plants (Chandra and Rawat 2015:124). Unfortunately, due to changes in subsistence practices and European food introduction, a loss of plant knowledge likely occurred. The ethnobotanic literature serves only as a guide for potential uses in pre-Columbian times, not as conclusive proof of those uses. When compared with the material culture (artifacts and features) recovered by the archaeologists, pollen, phytoliths, starch, and macrofloral remains can become use indicators. We provide the following ethnobotanic background to discuss plants identified during pollen analysis.

### Native Plants

#### Apiaceae (Parsley Family)

Members of the Apiaceae (parsley family) are mostly biennial or perennial herbs with stout, often aromatic stems that are found primarily in the temperate northern hemisphere (Smith 1977:177). Of the 460 worldwide genera, 94 genera and 440 species are found in the US and Canada (Zomlefer 1994:193). They do not produce phytoliths; however, starch grains produced by members of this family are diagnostic at the family level (Scott Cummings, personal communication, July 1995). Many plants in this family are important in modern cooking. Weedy members of this family often grow in disturbed areas, particularly when the soil is moist. Many plants in this family, including *Cymopterus* (springparsley), *Lomatium* (biscuitroot, prairie parsley), and *Perideridia* (yampa) were used by Native American groups and were valued for roots, stems, and leaves which were processed for food, seasoning, and medicine (Harrington 1967:173,192; Kirk 1975:123,271). Several members, such as *Conium maculatum* (poison-hemlock) and *Cicuta* (water-hemlocks), are poisonous (Smith 1977:177).

#### Liliaceae (Lily family)

The Liliaceae (lily) family consists mainly of perennial herbs with sympodial rhizomes or bulbs (Hickey and King 1981:491). The flowers are typically large with brightly colored perianths and conspicuous stamens. Many secrete nectar and attract bees and various butterflies (Zomlefer 1994:270-272).

### **Brodiaea Group (Brodiaea)**

The *Brodiaea* group includes *Brodiaea* (brodiaea), *Dichelostemma* (blue dicks, firecracker flower, twining brodiaea, snake lily), and *Triteleia* (triteleia, brodiaea). Genera in the *Brodiaea* group are perennial herbs in a variety of habitats, including grasslands, fields, meadows, woods and forests, forest edges, dry slopes, scrub, desert, vernal pools, and/or moist soils (Hickman 1993:1180-1183, 1190-1192, 1206-1208; Kearney and Peebles 1960:182; Kirk 1975:173).

All species of these genera produce fibrous, bulb-like corms that are high in starch, sugar, and protein. The small corms can be eaten raw, but mostly they were cooked by boiling, steaming, roasting, or baking. Corms also were baked, roasted, or dried for winter use. The corms are noted to taste sweeter than white potatoes. (Anderson 2005:291-305) (Dempsey n.d.:5; Kirk 1975:173; McGary 2001:83-99; Mead 2003:77-83; Medsger 1966:197).

### **Calochortus nuttallii (Sego lily)**

Several parts of the sego lily are edible, including the greens, seeds, bulbs, and flowers. The bulbs constitute the most usable portion of the plant, and were frequently boiled. They may also be stored for future use (Harrington 1967:159-161; Moerman 1998:132; Sweet 1976:35; Yanovsky 1936:12).

### **Erythronium (Trout lily)**

Raw trout lily plants were taken as a contraceptive, and a poultice of smashed trout lily roots was used to alleviate swelling and remove splinters. Bulbs were also eaten in Nebraska, North Dakota, South Dakota, California, and Washington (Moerman 1998:227) (Yanovsky 1936:13).

### **Polygonatum (Solomon's seal)**

A Solomon's seal plant infusion was taken as a remedy for poison, and a poultice of the roots could be applied to the skin to reduce swelling and treat snake bites (Moerman 1998:422).

## **Poaceae (Grass Family)**

Poaceae (grass family), one of the largest and most economically important families of plants, grow in all climates, though local conditions determine their abundance. Cereals, grown worldwide, have been a staple in diets for thousands of years. Cereals and all grass seeds contain an incomplete protein complex and often are eaten with legumes to provide a complete protein complex that contains all the essential amino acids (Couplan 1998:464).

Native Americans typically used a seed beater and burden basket when collecting caryopsis (seeds) (Ebeling 1986:183, 195; Grant 1978:517). When present, grass awns (hairs) were singed off by exposing the seeds to flame. Depending on species, grass seeds ripen from spring to fall (Kirk 1975:189; Pohl 1954:131-132), providing a long-term available food source. Grains were parched and ground into meal for making mush, bread, flour, and cake (Ebeling 1986:195-198; Kirk 1975:177-189).

Grass leaves and stems were used for building, weaving, and making cordage. Bedding, baskets, mats, clothing, screens, nets, twine, thatch, brushes, brooms, hairbrushes clothing, and sandals were made from grasses. Grasses also were used for floor and roof coverings and tinder (Ebeling 1986:195-197; Kelly 1978:417; Moerman 1998:127).

## DISCUSSION AND CONCLUSIONS

Site CA-030-2147, is situated in a small rockshelter located in the foothills of the Klamath Mountains nearby the town of Hornbrook in Siskiyou County, California. The rockshelter was occupied between the late prehistoric and early historic period. In addition to human occupation, this rockshelter was home to rodents, perhaps woodrats. Local vegetation includes juniper (*Juniperus*), oak (*Quercus*), buckthorn (*Ceanothus*), wild buckwheat (*Eriogonum*), grasses (Poaceae), and forbs.

Pollen analysis of the control sample (1) (Table 1) establishes a record of modern vegetation dominated by *Pinus* pollen, representing local pine trees (Table 2 and Figure 1). Moderate quantities of *Abies*, *Pseudotsuga*, and *Quercus* pollen represent wind transport of pollen from fir, Douglas fir, and oak trees, the latter growing in the vicinity of the shelter. The presence of small quantities of *Alnus*, *Betula*, *Juniperus*, and *Picea* pollen indicates wind transport of pollen from alder and birch trees growing near a water source, juniper growing in the vicinity of the shelter, and spruce trees likely growing at higher elevation near the fir trees. Pollen representing plants growing in the immediate vicinity of the rockshelter are represented by small to moderate quantities of Amaranthaceae, High-spine Asteraceae, *Ceanothus*, *Convolvulus*, Cyperaceae, *Eriogonum*, Fabaceae, Poaceae, and Rosaceae pollen representing plants in the goosefoot family, members of the sunflower family, buckthorn, bindweed, sedges, wild buckwheat, legumes, grasses, and a member of the rose family. Only a small quantity of microscopic charcoal was observed in this sample. Total pollen concentration is calculated as more than 37,400 pollen per cc of sediment.

Pollen analysis of the rockshelter sample (2) that was collected to represent the period of human occupation (between the late prehistoric and early historic period) yielded a similar, but slightly different signature. *Pinus* pollen dominated the record and small to moderate quantities of *Alnus*, *Juniperus*, *Abies*, *Pseudotsuga*, and *Quercus* representing alder, juniper, fir, Douglas fir, and oak trees. In addition, small to moderate frequencies of Amaranthaceae, Apiaceae, *Artemisia*, High-spine Asteraceae, Liguliflorae, *Ceanothus*, *Convolvulus*, *Eriogonum*, *Euphorbia*, Poaceae, Rosaceae, and *Toxicodendron* pollen reflect plants in the goosefoot family, members of the umbel family, sagebrush, plants in the sunflower family, members of the chicory tribe of the sunflower family, buckthorn, bindweed, wild buckwheat, spurge, grasses, a member of the rose family, and poison ivy/oak. Recovery of an elevated Poaceae pollen frequency accompanied by aggregates suggests collecting and processing grasses. In addition, it is possible the Apiaceae pollen represents collecting and processing tubers from plants in this family.

Phytolith analysis of the rockshelter sample yielded a record heavily dominated by Festucoid or cool season grass phytoliths (Figure 2), reflecting the most abundant group of grasses on the landscape. Recovery of elongate dendritic forms, which are typically produced in the glumes surrounding cool season grass seeds, suggests processing grass seeds. A few saddle forms, typical of Chloridoid (short) grasses were observed. Bulliforms and smooth and spiny elongates are observed in all grasses and do not contribute to understanding the local grass population. Trichomes, which are silicified hairs, are produced in both grasses and sedges. Most of the trichomes are not considered diagnostic. Calcium oxalate druses were observed. This form is produced in both cacti and members of the Amaranthaceae (goosefoot family), so either could be represented. It is unusual to have calcium oxalates survive lab processing, so they likely were present in large quantities. Single centric diatom and sponge spicule forms were observed, indicating moisture. Most interesting were the starches recovered in this sample. Processing grass seeds is confirmed by recovery of Poaceae-type centric starch. In addition, two sizes of eccentric starches were recovered. Likely they represent the same type of plant, as it is not unusual to see size differentiation in reference samples. Eccentric starches are usually produced in roots and tubers rather than seeds. Tubers in the Solanaceae and Liliaceae families are documented to produce eccentric tubers of the morphology observed here. It is far less likely that these starches represent wild potato than that they represent a member of the lily family such as brodiaea, sego lily, or trout lily. Starch does not identify the plant used to genus, but it does suggest that a member of this family was processed here.

The combined pollen, starch, and phytolith record for this rockshelter suggests processing grass seeds and corms from a member of the lily family, both represented by starches. In addition, both the pollen and phytolith records also suggest processing grass seeds. It is possible that roots from a member of the umbel family also were processed, although no starches unique to this family were observed.

TABLE 1  
PROVENIENCE DATA FOR SAMPLES FROM THE COMMON CUT ROCKSHELTER,  
CA-030-2147, SISKIYOU COUNTY, CALIFORNIA

Sample No.	Unit	Depth (cmbd)	Provenience/ Description	Analysis
CA-030-2147				
1			Common Cut Rockshelter soil control pinch sample	Pollen
2	2	0-10	Common Cut Rockshelter soil sample	Pollen Phytolith Starch

TABLE 2  
 POLLEN TYPES OBSERVED IN SAMPLES FROM THE COMMON CUT ROCKSHELTER,  
 CA-030-2147, SISKIYOU COUNTY, CALIFORNIA

Scientific Name	Common Name
ARBOREAL POLLEN:	
Betulaceae:	Birch family
<i>Alnus</i>	Alder
<i>Betula</i>	Birch
<i>Juniperus</i>	Juniper
Pinaceae:	Pine family
<i>Abies</i>	Fir
<i>Picea</i>	Spruce
<i>Pinus</i>	Pine
<i>Pseudotsuga</i>	Douglas-fir
<i>Quercus</i>	Oak
NON-ARBOREAL POLLEN:	
Amaranthaceae:	Amaranth family (now includes Chenopodiaceae, these two families were combined based on genetic testing and the pollen category "Cheno-ams")
Apiaceae	Umbel family
Asteraceae:	Sunflower family
<i>Artemisia</i>	Sagebrush
High-spine	Includes Aster, Rabbitbrush, Snakeweed, Sunflower, etc.
Liguliflorae	Chicory tribe, includes Dandelion and Chicory
<i>Ceanothus</i>	Ceanothus, California-lilac, Buckbrush, Deerbrush
<i>Convolvulus</i>	Bindweed
Cyperaceae	Sedge family
<i>Eriogonum</i>	Wild buckwheat
<i>Euphorbia</i>	Spurge

TABLE 2 (Continued)

Scientific Name	Common Name
Fabaceae	Bean or Legume family
Poaceae	Grass family
Rosaceae	Rose family
<i>Toxicodendron</i>	Poison oak
OTHER:	
Microscopic charcoal	Microscopic charcoal fragments
Total pollen concentration	Quantity of pollen per cubic centimeter (cc) of sediment

FIGURE 1. POLLEN DIAGRAM FOR SITE CA-030-2147, SISKIYOU COUNTY, CALIFORNIA.

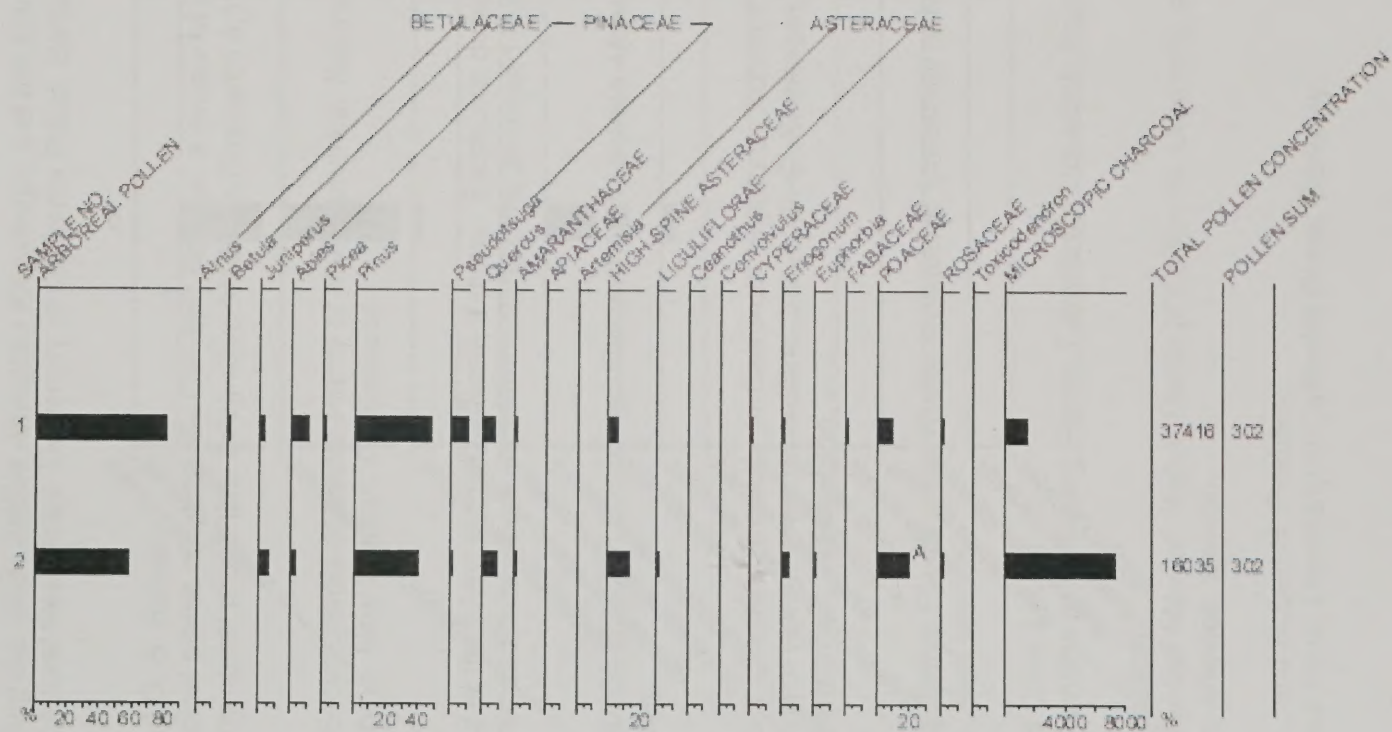


FIGURE 1. POLLEN DIAGRAM FOR SITE CA-030-2147, SISKIYOU COUNTY, CALIFORNIA.

FIGURE 2. PHYTOLITH DIAGRAM FOR SITE CA-030-2147, CALIFORNIA.



FIGURE 2. PHYTOLITH DIAGRAM FOR SITE CA-030-2147, CALIFORNIA.

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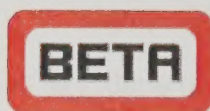
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## REPORT OF ANALYSIS OF RADIOCARBON DATING

### APPENDIX 5: Radiocarbon Dating



**Beta Analytic**  
RADIOCARBON DATING

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**Mr. Darden Hood**  
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**Mr. Ronald Hatfield**  
**Mr. Christopher Patrick**  
Deputy Directors

ISO/IEC 17025:2005 Accredited Test Results: Testing results recognized by all Signatories to the ILAC Mutual Recognition Arrangement

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August 30, 2018

Dr. Eric W. Ritter  
United States Department of the Interior  
Bureau of Land Management  
Redding Field Office  
355 Hemsted Drive  
Redding, CA 96002  
USA

RE: Radiocarbon Dating Results

Dear Mr. Ritter,

Enclosed is the radiocarbon dating result for one sample recently sent to us. As usual, specifics of the analysis are listed on the report with the result and calibration data is provided where applicable. The Conventional Radiocarbon Age has been corrected for total fractionation effects and where applicable, calibration was performed using 2013 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

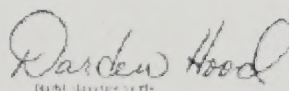
The reported result is accredited to ISO/IEC 17025:2005 Testing Accreditation PJA #59423 standards and all pretreatments and chemistry were performed here in our laboratories and counted in our own accelerators here in Miami. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2005 Testing Accreditation PJA #59423 program participated in the analysis.

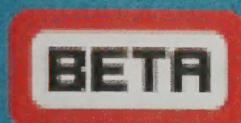
As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than  $\pm 30$  years, a conservative  $\pm 30$  BP is cited for the result. The reported  $\delta^{13}C$  was measured separately in an IRMS (isotope ratio mass spectrometer). It is NOT the AMS  $\delta^{13}C$  which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the result, please consider any communications you may have had with us regarding the sample. As always, your inquiries are most welcome. If you have any questions or would like further details of the analysis, please do not hesitate to contact us.

Thank you for prepaying the analyses. As always, if you have any questions or would like to discuss the results, don't hesitate to contact us.

Sincerely,

  
Darden Hood



**Beta Analytic**  
RADIOCARBON DATING

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ISO/IEC 2005:17025-Accredited Testing Laboratory

## REPORT OF RADIOCARBON DATING ANALYSES

Eric W. Riber

Report Date: August 30, 2010

United States Department of the Interior

Material Received: August 22, 2010

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) ± 1σ (68% probability)	
		Calibrated Results: 2σ (95% Probability) High Probability Density Range Method (HPD)	
Beta - 662268	214T-17	100 ± 59 BP	(RMS 510C) -19.7 o/b
			(RMS 515N) -44.3 o/b
	(68.3%)	1886 - 1836 cal AD	(148 - 15 cal BP)
	(37.1%)	1882 - 1736 cal AD	(260 - 214 cal BP)
Submitter Material: Bone (Non-heated)			
Pre-treatment: (bone collagen) collagen extraction with alkali			
Analyzed Material: Bone collagen			
Analysis Service: AMS-Standard delivery			
Percent Modern Carbon: 93.78 ± 0.37 pMC			
Fraction Modern Carbon: 0.9378 ± 0.0037			
δ14C: -13.37 ± 3.69 o/oo			
δ15N: -20.40 ± 3.69 o/oo (1950-2010.00)			
Measured Radiocarbon Age: (without δ13C correction): 10 ± 30 BP			
Calibration: BetaCal2.1: HPD method: INTCAL13			
Carbon/Nitrogen: C/N: 3.3 %C: 48.00 %N: 14.00			

Results are ISO/IEC 17025:2005 accredited for submittal of material after one year in the analysis. All work was done at Beta in accordance with ISO/IEC 17025:2005 accreditation and 17025:2005 fields. The 'Conventional Radiocarbon Age' was measured using the Libby half-life (5568 years), is reported for total sample fraction and was used for statistical calibration where applicable. The Age is reported in the nearest 10 years and is reported as radiocarbon years before present (BP), 'present' = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% of the 14C signature of 1950 AD (95% of 1000 ± 20 pMC). Control errors are 1 sigma counting statistics. Calculated errors less than 50 BP in the Conventional Radiocarbon Age are conservatively rounded up to 50. δ13C values are in the material base and the δ15N, δ13C and δ15N values are relative to VPDB. References for radiocarbon calibration are cited at the bottom of calibration graph pages.

# BetaCal 3.21

## Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables:  $\delta^{13}\text{C} = -19.7$  o/oo)

Laboratory number    Beta-502285

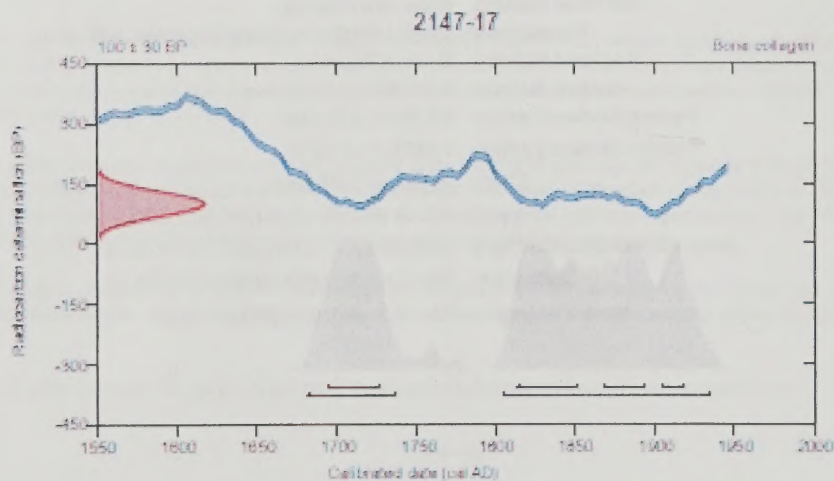
Conventional radiocarbon age     $100 \pm 30$  BP

95.4% probability

(68.3%)	1805 - 1935 cal AD	(145 - 15 cal BP)
(27.1%)	1662 - 1736 cal AD	(268 - 214 cal BP)

68.2% probability

(22.2%)	1814 - 1852 cal AD	(136 - 98 cal BP)
(20.8%)	1694 - 1726 cal AD	(256 - 224 cal BP)
(16.8%)	1868 - 1894 cal AD	(82 - 56 cal BP)
(8.4%)	1904 - 1916 cal AD	(46 - 32 cal BP)



### Database used

INTCAL13

### References

#### References to Probability Method

Brown, Ramsey, C. (2009) Bayesian analysis of radiocarbon dates. *Radiocarbon*, 51(1), 337-360.

#### References to Database INTCAL13

Reimer, et al., 2013, *Radiocarbon*55(4).

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Page 3 of 3



**Beta Analytic**  
RADIOCARBON DATING

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ISO/IEC 2005-17025 Accredited Testing Laboratory

## Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NIST SRM-4990D and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error  $\times 2$ ) to account for total laboratory error.

Report Date: August 30, 2018  
Submitter: Dr. Eric W. Riden

### CIA MEASUREMENTS

#### Reference 1

Expected Value:  $0.49 \pm 0.10$  pMC

Measured Value:  $0.49 \pm 0.02$  pMC

Agreement: Accepted

#### Reference 2

Expected Value:  $129.41 \pm 0.06$  pMC

Measured Value:  $129.36 \pm 0.36$  pMC

Agreement: Accepted

#### Reference 3

Expected Value:  $96.06 \pm 0.50$  pMC

Measured Value:  $96.90 \pm 0.31$  pMC

Agreement: Accepted



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